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THE

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OF

MEDICAL SCIENCE.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. I.—*Two Cases of Acute Ascending Paralysis.** By JOSEPH O'CARROLL, M.D., F.R.C.P.I.; Physician to the Richmond, Whitworth and Hardwicke Hospitals, Dublin.

CASE I.—M. F., an attendant in a lunatic asylum, was admitted to the Whitworth Hospital, under my care, on the 4th Oct., 1901, complaining of pain and tenderness over the region of the stomach, and of swelling of both legs. He was thirty-three years of age, unmarried, and looked fairly healthy, though somewhat spare.

He stated that about three months before admission he began to lose his appetite, so that, whilst eating very little solid food, he yet usually felt as if he had had enough. He began also to lose flesh, and his bowels became confined. Later on he had morning vomiting, which he attributed to medicine, but for which the alcoholic habit was more probably responsible. About a week before admission he noticed some swelling in both legs, and walking caused him some pain. He also had some puffiness of the lower eyelids in the mornings.

He had been some years in the army; had habitually drunk a great deal of alcohol; and a favourite "pick-me-up" was an eggflip composed of two eggs and half a bottle of Worcestershire

*Read before the Section of Medicine in the Royal Academy of Medicine in Ireland, on Friday, May 16, 1902. [For the discussion on this paper, see page 68.]

sauce. A scar on the glans penis seemed sufficient evidence that he had had syphilis.

The family history threw no light on the case.

Physical Examination.—There was œdema of both legs, more marked in the left. Abdomen distended transversely; liver dulness extended, in nipple line, from upper margin of sixth rib to three fingers' breadth below the hypochondriac margin, and, occupying a similarly increased depth in the middle line, it merged in a greatly-increased splenic dulness in the left hypochondrium. There were slight crepitations (œdema ?) at the base of the right lung behind; and there was a systolic apex murmur of the heart. The urine, which, according to the patient's statement, had been of ordinary appearance up to the day before admission, showed now some blood colouring, and in addition, microscopically, some pus corpuscles and casts of nearly all descriptions.

The case was regarded as one of nephritis at first; but it was found difficult to refer it to any particular type, the quantity of the urine being usually about 35 ounces (one litre), the specific gravity low—1012 to 1016. Then the suspicion of renal calculus came up, and later that of renal tuberculosis, but no tubercle bacilli could be found in the urine.

For three weeks after admission the patient was kept in bed, in part on account of the urinary condition, and in part on account of the temperature, which, during the remainder of his life, oscillated from normal in the morning to 101° in the evening After the first week all œdema disappeared. No satisfactory diagnosis had been arrived at, when on the 30th October he noticed some feebleness in his legs. Next day, the 31st, I examined him carefully, and found that he could make only a very poor attempt to draw up his legs as he lay on his back. The knee jerks were quite lost. There was no anæsthesia, no tenderness of muscles or nerve-trunks, and Kernig's knee-extension sign was absent. Next day, 1st November, there was flaccidity of the abdominal muscles, and breathing was largely diaphragmatic. On the 2nd November there was great weakness in both hands and arms; but no recognisable anæsthesia in upper or lower limbs or the trunk. No disturbance of bladder or rectum. In the evening he died, evidently by paralysis of the diaphragm. His mind was clear almost to the last moment.

Necropsy.—About half a litre of serous fluid in abdomen; several old pleural adhesions on both sides. *Lungs* somewhat

emphysematous and œdematous. *Heart.*—Two large, tassel-like vegetations on tricuspid valves. *Aorta* atheromatous. *Spleen*, 18 cm. long, and proportionately enlarged in other diameters, showed some perisplenitis, and was adherent to diaphragm. *Kidneys.*—Left large, fairly soft, and with slightly adherent capsule; right also much enlarged, but capsule not adherent. *Liver* much enlarged, the vertical diameter of right lobe being 23 cm., that of left lobe 21 cm. *Pancreas* normal. *Cranium.*—Dura mater somewhat thick, and somewhat increased amount of sub-arachnoid fluid; slight thickening on inner surface of frontal bone (? syphilitic). *Brain* apparently normal. *Spinal Canal.*—A large number of small, flat, bony plates attached to the lace-like arachnoid, and to its prolongations over the nerves (arachnitis ossificans), but there was no sign of recent pachy- or lepto-meningitis. Neither on macroscopic nor on microscopic examination was any lesion discovered in the brain or cord; but Nissl's method was not applied. The nerves were not examined.

No clear pathological diagnosis could be made. In the presence of tricuspid valvulitis, subacute nephritis, and gross splenic and hepatic enlargement, some general process must have been at work rather than a primary lesion of any one of those organs. The ossifying arachnitis was an old lesion, and was possibly due to the same cause as the slight thickening observed on the frontal bone.

Case II.—On December 2nd, 1901, I saw, in consultation, Mr. J., aged forty-one, a lithographic artist, living on the north side of Dublin. About a fortnight before, his house had been flooded in the basement by an overflow of the river Tolka, and he had had to wade through sewage to get things out of his kitchen. About forty-eight hours later he felt unwell, had some shivering, and had to take to his bed with a continuous sub-pyrexial illness, not apparently typhoid, although there was apparently slight enlargement of the liver and spleen. There was no sign of paralysis.

Dec. 3rd.—His wife noticed that when he had to get out of bed he was feeble on his legs. In the evening he was quite powerless in the legs, and the bladder began to dribble.

Dec. 4th.—I saw him for the second time this evening. He lies extended on his back, perfectly clear in mind, uncomplaining, and apparently unconscious of any discomfort, and without any anxiety as to his condition. His bladder is distended and dribbling.

No knee jerks; no power in legs; stroking the soles of the feet causes the very faintest flexion movement of the toes. Kernig's knee extension sign absent. Sensation for touch is absent from the soles to the fourth rib; above this level, for a zone of about two inches, he winces now and then at a mere touch, as if it caused pain. Sensation of pain is dull, but he winces rather suddenly when a pinch or a pull at the hair of his legs or pubis becomes severe. Breathing is mostly diaphragmatic. The abdomen is rounded, tympanitic, and tense, though it moves with the diaphragm. There is incontinence of urine. Power and sensation in the arms are good. He is, and has been, unduly wakeful. Pulse 110, temperature 101·8°. No tenderness of muscles or nerve-trunks.

Dec. 6th.—Third visit. Condition as before, but the anæsthesia has advanced still higher. Breathing is difficult. Mind clear.

Dec. 9th.—Died by paralysis of diaphragm.

I elicited from this patient that he had lately taken up photography as an amusement, but he had not been handling any chemicals other than hydrochinone and sodium hypobromite. I could get no history of anything in his daily work likely to have set up any intoxication. There was nothing in his personal or family history to suggest syphilis, though I could not exclude it.

Unfortunately I could not get a *post-mortem* examination.

These two cases resemble one another in the fact that the onset of paralysis had been preceded by a pyrexial illness of indeterminate character, the paralysis supervening more or less suddenly as a terminal phenomenon. They resemble one another closely in the general course of the paralysis and in the fatal issue; but there is this marked difference between them—that in Case I. the paralysis began in the lower limbs, then involved the trunk muscles and the arms, and finally the diaphragm, and that the functions of bladder and rectum remained undisturbed; while in Case II. a somewhat similar paralysis was accompanied in its earliest stages and throughout by paralysis of these organs. If we were to assume that the primary lesion in both cases was one of the spinal cord we should have to suppose that in Case I. it involved the cord from almost its lowest levels, but avoided at those levels the centres for the pelvic viscera, while in Case II. it started from the lowest levels of the cord, but showed no discrimination

in favour of the visceral centres. Such an explanation of the first case would be acceptable enough, were it not for the difficulty in imagining an intoxication or an inflammation so narrowly selective in its action as this would imply. On the other hand, we are acquainted with several forms of intoxication in which the peculiarity obtains that the skeletal nerves are affected while the visceral ones are not; and thus limb paralysis may be extreme while the bladder performs its functions normally. Such are, for instance, the neuritis of alcoholic, arsenical, and diphtheritic intoxication. I think the easiest explanation of Case I. is peripheral neuritis. It accords with the patient's previous history, and with our general experience. Unfortunately it, too, demands a selective action of the intoxicant on the motor fibres, but it is our ordinary experience that many forms of intoxication bear more upon one set of fibres than on others, and, indeed, the exemption of one set of fibres rather makes for neuritis. Case I., therefore, may go into the category of multiple neuritis, and falls into line with a large number of the cases of so-called Landry's paralysis. It is, of course, to be realised that the ossifying arachnitis was an old condition, and had probably no part in producing the symptoms under discussion.

With regard to Case II., I find it much more difficult to accept the theory of neuritis. The early involvement of the bladder is quite foreign to our experience of peripheral neuritis, and can only, I believe, be explained on the supposition of a morbid process operating within the spinal canal. We have here motor functions, sensory functions, and lower visceral functions in abeyance together. Nothing will explain this conjunction so easily as an intra-spinal process. Some years ago I watched an almost similar, but more prolonged, case in a young woman, and I made the diagnosis of Landry's paralysis. The necropsy revealed a suppurative spinal meningitis, such as we find in epidemic cerebro-spinal meningitis. It was probably secondary to a suppurating salpingitis which was also present. I have no proof that this was the explanation in Case II.; but I cannot help supposing that some mischief, organic or toxic, acting within the spinal canal, underlay the symptoms of that case. Whether this mischief acted directly

on the spinal centres in the cord or on the emergent nerves within the spinal canal I see no way of deciding with reason.

These two cases, capable of being grouped together under the heading of acute ascending paralysis, are not equally reducible to the classification of Landry's paralysis—that is, if we take Landry's paralysis, as his own cases seem to suggest, to be acute ascending peripheral neuritis. But among the ninety-three cases reported as Landry's paralysis, collected and analysed with great labour by Dr. Judson S. Bury in his book on peripheral neuritis, there is a considerable number in which changes were found within the spinal canal—in some bacillary infection of the cord (typhoid), in some meningo-myelitis, in some areas of softening, in one the virus of rabies, in some hæmorrhages or serous effusion, and various other changes. From which, I think, we may conclude that the name Landry's paralysis is a useful clinical label, but that it conveys little or nothing as to the pathology of such cases. My two cases, observed, I regret to say, much less perfectly than I should wish, suggest the deduction that acute ascending paralysis may be extra- or intra-spinal in origin, but that, at least when fatal, it ultimately takes in the spinal part of the multiple reflex arcs, the health of which is necessary for the ordinary functions of life.

ART. II.—*Notes on the Year's Work at Farnham House.*[a] By W. R. DAWSON, M.D., F.R.C.P.I., Medical Superintendent.

FOLLOWING the practice which I have adopted for the last two years, I venture to bring forward a few notes on the more interesting points which have arisen in practice at Farnham House during the past twelve months.

Causation.—Speaking broadly, the causes of insanity may be divided into three main groups—viz., inherited diathesis, moral and mental wear and tear, and intoxication. Needless to say, these groups often, indeed generally, overlap, but occasionally the cause of an attack can be assigned to one alone. Examples of all three are to be found amongst the cases admitted during the year just ended. To deal first

[a] Read before the Section of Medicine in the Royal Academy of Medicine in Ireland, on Friday, May 16th, 1902.

with the most widespread influence of all, inherited diathesis, without which other causes would frequently be inoperative, it may be recalled that, as mentioned in last year's notes, an inherited tendency to nervous disease had been found in no less than 78 per cent. of the previous 50 cases. The admissions during the year at present under review show a similar proportion of neuropathic cases, slightly over 78 per cent. In nearly 36 per cent. the diathesis must be set down as the really essential, though not the sole, cause of the mental illness; in 50 per cent. the chief cause was mental wear and tear; while intoxication may be credited with the remaining 14 per cent.,* though it had a good deal to do with some of the other attacks. Indeed, in by far the larger number there was more or less reason to think that toxic influences, of one kind or other, had been at work.

Periodic Insanity.—One of the modes in which a neuropathic diathesis most distinctly shows itself is the occurrence of repeated attacks of insanity. In its most pronounced form, this tendency develops into the recurrent manias and melancholias, or into the combined form known as *folie circulaire.* But even if we are not prepared to go as far as those authors (Kraepelin, for example) who would include every case of recurrence under the head of periodic insanity, we must admit that there are border-line cases where the recurrences are so frequent that it is difficult to decide to which class they belong. A case of melancholia admitted during the winter illustrates this point.

Case I.—The patient was an unmarried woman, aged 44, who had always been dull, lethargic, and apparently somewhat weak-minded. Insane heredity is denied, but there is good reason to suppose that a certain amount of nervous instability has been inherited. At the age of 17 she had her first attack of insanity, and since then four others, the present being the sixth. All have been melancholic in character, with delusions and occasional outbursts of semi-hysterical excitement. There has been an interval of about 10 years between the last two attacks. The present one is said to have developed gradually as the result of religious emotion, and the delusions turn on religion.

* One alcoholic case was not actually insane, though at the time of admission probably not far from it.

The number of the recurrences, their similarity, and the early age at which the first attack took place, all incline one to the view that this case approximates to the periodic insanities, and the rather inadequate causation assigned to the present attack points in the same direction.

CASE II.—The same remarks apply, to a certain extent, to a case of acute delusional mania admitted last autumn. Here there was a neuropathic heredity, and the patient, an unmarried woman, aged 39, had had two previous attacks, the first at the age of 24. All three were maniacal, and all lasted about the same time, four months.

Some of the other cases admitted or discharged during the year may prove to be of this character, but sufficient time has not yet elapsed to justify an opinion.

With these doubtful cases it may be instructive to compare two genuine cases of periodic insanity, one of recurrent mania, the other of recurrent melancholia, which have been inmates of the Institution for many years.

CASE III.—The first is that of a married but childless woman, who was admitted in 1859 at the age of about 37.[a] There is said to have been insanity in her mother's family. The patient herself appears to have been a pleasant, worthy, religious woman. The first attack of mania is said to have been quite sudden in onset, but how long it lasted has not been recorded. For many years, f not ever since her admission, there appears, so far as can now be ascertained, to have been little change in the character of the case, but the mental state in the intervals between the attacks is very gradually receding further from sanity. During these intervals, however, which usually last from about a fortnight to three weeks, she is dignified, ladylike and pleasant, albeit a trifle imperious, and occupies herself with fancy-work. Gradually she becomes restless and still more imperious, with a tendency to violence if crossed, and begins to command quantities of expensive things to be got for her, and to distribute orders for large sums of money. After some days of this she has all the furniture, except the bedstead, removed from her room, and retires to bed, where she remains during the rest of the attack. While this lasts she

[a] She had been treated here for a previous attack from May 6th, 1853, to August 17th, 1854, and is entered as "cured."

is excited, incoherent, hilarious or weeping, frequently noisy, and sometimes violent, and dirty in her habits, and her language is occasionally extremely forcible—in fact she is almost the antithesis of her saner self. The duration of this part of the cycle is from six weeks to two months, at the termination of which she asks for her clothes, gets up, and resumes her saner habits until the next attack.

This case well illustrates the two points which especially characterise the prognosis in periodic insanity—viz., the improbability of cure, and the slightness of the tendency to dementia. Such cases go on, as this has done, for a lifetime, suffering attack after attack, and yet in the intervals showing but little progress on the downward grade from year to year.

Case IV.—The second case is by no means so regular in its periodicity. It is that of a young, unmarried woman, aged 31, with a frightfully bad heredity, and, in some respects, most unfortunate home circumstances, who from transitory attacks of depression seems to have gradually developed severer mental seizures, in which she is suicidal at times. She was admitted about 7½ years ago, and the essential character of the attacks (of which there are two or more in the year, at irregular periods) has not changed since, though they have become less frequent, and much less violent (for example, she has not now to be tube-fed, which was frequently the case at first). When at her best she is a busy, happy, kindly little thing, though always morbidly conscientious and self-depreciatory; when ill, the conscientiousness develops into delusion, and the self-abasement makes her desire to injure herself and to cease to live. She sits crouched in a corner, silent, miserable, totally given up to her sombre broodings. The transitions are occasionally abrupt. Possibly some might see in this case an approach to alternating insanity, so marked is the contrast.

Other forms of "Neuropathic Insanity."—Of the other forms of insanity which are especially prone to develop in those of neuropathic diathesis the admissions furnish four examples—three of paranoia, and one of the cognate but much rarer disease which has been called by Kahlbaum "Hebephrenia." Of the former, two were admitted for an attack of acute insanity supervening on the more chronic malady.

The first case had glycosuria as a symptom, and an account of it has already been published in a study of the connection of that phenomenon with insanity. The acute seizure was melancholic in character, and it was interesting to remark that the mental depression centred on the already existing delusions, and that these fell more and more into the background as recovery progressed, though they never disappeared, and probably never will. The second case was one of senile acute mania, and also had glycosuria, but here the maniacal delusions were quite different from the paranoiac, which came into prominence only as the mania passed away. The third case of paranoia presented no unusual symptoms, being that of a man of 40, with some insane heredity, who a few years before, after an operation, developed delusions of persecution of the ordinary character, and, as usual in such cases, was better for a while after every change of abode. He left on probation after a time, and appears for the time being to be doing well.

The case of *hebephrenia* deserves fuller notice.

Case V.—The patient was a lad, aged about 19, but looking younger, with bad family history on his mother's side. He had always been solitary, had lived alone in lodgings, and had been far too much his own master, keeping all sorts of irregular hours. He was not dissipated, but had practised self-abuse for about two years, though apparently not to excess. For some months he had been feeling depressed, with vague ideas that he was "degenerating," and that his appearance was changing for the worse. At length one day he walked down to the sea (about a couple of miles) and threw himself in, changed his mind, got out again, dried himself at a house near, and went back to his lodgings. He made no secret of his act, for which he ascribed various reasons to different people, betraying a suspicious turn of mind. On admission he looked pale and out of health, was constipated, and had a systolic murmur audible all over the heart, but was otherwise healthy and well-developed, though boyish for his age. He showed little reticence in speaking of his suicidal attempt or of his self-abuse, but was at first very miserable and very suspicious, thinking that everything was being done to annoy and torture him, that his sisters were not really so related to him, and so forth. It was very difficult to get him to take the necessary

medicine. In about ten days, however, he began to cheer up and take an interest in games, especially golf, while his physical health improved markedly under tonics, cold baths, and attention to the bowels. (He, however, developed the characteristic tendency to bursts of apparently causeless laughter). Finally, although not absolutely normal mentally, he was sufficiently recovered to be discharged in about six weeks,* by which time his delusions had practically disappeared, and physically he appeared well and strong, and his heart-sounds were normal. His sleep, however, was not quite satisfactory, and he still required to take a cascara mixture.

One's general impression was that the mental symptoms were in many respects like an exaggeration of the frothy emotionalism, introspection, and self-centredness of puberty, which had been thrown late in his case, partly by inherent causes, partly by environment.

The relation of hebephrenia to paranoia is interesting, and is not fully agreed upon. The resemblance of the two conditions is very considerable, but it would rather appear that whereas paranoia consists in a sort of gradual and progressive hypertrophy of certain peculiarities of the individual, hebephrenia is essentially a hypertrophy of the peculiarities found at a particular period of life in almost all individuals, and is, therefore, related to imbecility. The gloomy forecast in both instances is, of course, due to the intensity of the neuropathic diathesis.

Insanity due to Mental Wear and Tear.—Under this head may be grouped not only those cases which can be ascribed to worry, religious emotion, and the like, but also certain of the "epochal insanities," notably the climacteric and senile varieties. The admissions furnished several examples of cases in which one or other of these influences was operative in causing the attack, though rarely the sole cause. Thus in three cases old age was an important factor, two being maniacal and one melancholic, but in addition two of the cases (one of the former and the melancholic) suffered from glycosuria, and one from aortic stenosis and nephritis. Even in the maniacal cases the delusions were of an unpleasant cast. Two

* Since March 31st.

of the cases recovered, showing that even very advanced age does not render a case hopeless. One rather nondescript case showing mental weakness (probably congenital) and delusions, with occasional slight excitement, of a more or less hysterical type, appeared to derive its origin, so far as the more acute symptoms were concerned, from the climacteric only. The patient, however, had always been shy, lethargic, peculiar, and self-centred, and the gradual development of delusions of persecution about the climacteric probably indicates a state not very remote from a late paranoia. The patient, however, improved somewhat under treatment. She showed in a marked way the insane habit of underlining words in her voluminous letters. It may be noted here that another case, already alluded to (Case I.), had all her life manifested, perhaps even more markedly, the same lethargy, indolence and egotism, with a certain childishness. These characteristics form one of the modes ("stigmata") by which a neuropathic diathesis expresses itself, and on such a substratum actual technical insanity may readily be founded.

CASE VI.—A case of chronic melancholia, apparently caused by overstrain in hunting, together with uterine troubles (prolapse), in a married woman, aged 39, with some neurotic heredity, presented one interesting symptom. In the earlier part of the attack, when it was more acute, she had suicidal impulses from time to time, though she does not appear to have yielded to them further than to beat herself about the head with a poker. Up to about a year before admission, however, she stated that these impulses were preceded by a peculiar epigastric sensation, evidently an aura. It may be added that there was a strong element of hysteria in the case.

Acute Confusion.—Morbid mental states in which the leading characteristic is confusion are now generally held to be due to toxic influences of one kind or other. One such case under treatment during the year so far supported this contention that glycosuria was present for a time, showing at all events a disordered metabolism.

CASE VII.—It was that of a girl of 29, with very bad neurotic heredity, and herself nervous and probably erratic, though in

some ways clever and "managing." An interesting point in her history was the occurrence, at the age of about 21, of transitory exophthalmos, with thyroid enlargement, rapid pulse, and great thirst. This followed typhoid fever, and she recovered completely. During it she is said to have been mentally elated. The present attack is attributed to overwork and worry, and began with gradually-developing peculiarities and vague delusions that everything was going wrong, and the like, which lasted about six months. Some 2½ months before admission she had an unpleasantness with a friend, from which time she appears to have become worse, restless, and confused and obstinate, but able to pull herself together. Other measures having failed, she was sent here, and on admission was excited and very restless, childish and confused. She had great difficulty in expressing herself, and would often begin a sentence several times before she could finish it. Impaired attention and loss of memory for recent events were marked. The knee-reflexes were increased. The urine contained traces of albumen and of sugar. Sleep was bad, but digestion seemed fair. Both albumen and (later) sugar soon disappeared, and, curiously, after the latter had ceased the quantity of urine increased greatly. Nine days after admission suprarenal administration was begun, and was kept up in increasing doses for nearly a fortnight. There was possibly some improvement under it, but it was very slight. Later small doses of thyroid were given for about a fortnight, but produced no marked effect on the mental state. However, she continued to progress under general treatment, and recovered in less than five months from admission. The blood-pressure, high at first (145 mm.), fell to 120 mm. after a month, but subsequently rose again. Shortly before her discharge it appeared to be again on the decline.

Although this case is, therefore, not quite a typical example of toxæmic confusion, the presence of albumen and sugar in the urine points to the existence of a toxic blood-state, which, however, was probably secondary to the mental worry and other causes.

Other Toxic Psychoses.—Two alcoholic cases, one a sane voluntary patient with commencing peripheral neuritis, the other a case of mania produced by worry in an elderly alcoholic (the alcoholism being the essential, though not the exciting, cause), were admitted during the year, and followed the usual

course of such cases by recovering rapidly under treatment, both being discharged within a month.

Several cases associated with *glycosuria*[a] were made the subject of a special study which was published last winter. They have all now recovered, with the exception of a hopeless paranoiac, who indeed exhibited the symptom on only one or two occasions. In one of the best marked of these cases, that of a patient who recovered under anti-diabetic treatment, both the glycosuria and the melancholia which accompanied it appear to have been started by an attack of influenza.

Physical Accompaniments of Mental Disorder.—The interdependence of mind and body is once more brought out by the fact that not a single case admitted during the year was in what could be called perfect physical health. Glycosuria, albuminuria, cardiac disease or weakness, dyspepsia, rheumatism, eczema, or other ailment, was present in one or other, and when the patient recovered usually became ameliorated or got well.

The *mean arterial pressure* was again studied this year in 7 cases, in addition to further observations on four of the cases mentioned in last year's notes. They were as follows :— Melancholia, 4 cases; Mania, 4 cases; Acute Confusion, 1 case; Paranoia, 2 cases. The melancholic cases all showed high pressure, which in one who recovered during the year fell below normal before discharge. In 3 of the maniacal cases there was more or less stupor, and the blood-pressure was accordingly high, but fell below normal on recovery. The fourth case had also a high blood-pressure, which was probably habitual to the patient, who was a sufferer from chronic rheumatism. It did not fall on convalescence. The state of the arterial pressure in the case of acute confusion was high, as already mentioned. In those of paranoia it was high.

Physical Health.—The general health of the Institution has been good, and there were no epidemics. The only point of special interest not elsewhere touched on is connected with the diagnosis of the last illness of a patient who died in November.

[a] "Glycosuria and Insanity." Med. Press and Circular, Jan. 1, 1902.

Case VIII.—The patient was a male imbecile, aged 36, but in development resembling a boy of 15, and mentally quite childish. His head, though not small enough to be called microcephalic, was of the characteristic form. He was fat, ungainly in shape and movements, unsteady and weak, in fact almost paretic. The thyroid was enlarged, heart weak and probably fatty, feet and ankles constantly œdematous. On Nov. 14th he had an attack of indigestion, was given an aperient, and seemed much as usual next day. On the evening of the 17th it was noticed that he was not looking well, and next day his temperature was found to be 102°. Nothing very definite was to be made out except some tonsillitis, and slight tenderness in the left iliac fossa, but there was diminution of urine, and what was passed was found to contain albumen. Diuretics and purgatives were given. Next day he was worse, and on the 20th, although the temperature fell and the throat was better, a tinge of jaundice was noted, which was more marked next day, when the motions, which were rather free, appeared whitish in colour. He was seen that evening by Dr. Walter Smith, who considered the condition probably septic, and ordered an enema with eucalyptus oil, dry-cupping and fomentations over the kidneys, strychnin, and gin. The treatment was a good deal complicated by threatening of cardiac failure, and it also became difficult to get him to take food. Sleep also failed, and on the evening of the 22nd morphia gr. ¼ was administered by Dr. Smith's advice, notwithstanding which he had a restless night. On the 23rd all the symptoms were worse and uræmia was evidently supervening, as he was semi-unconscious all day, and had a few slight convulsions in the afternoon, and later, after a short period of unconsciousness, he died. Temperature was subnormal on the last two days.

The symptoms certainly point to septicæmia, and the point of entrance of the poison may have been either the intestinal tract or the tonsils. Unfortunately there was no autopsy.

Treatment.—Seven patients were subjected to *thyroid treatment* during the year. Three of these received only small doses, of whom one took 190 grains in all of the dried gland in 13 days, and showed some improvement, though it is doubtful how far this was due to the treatment, which in this form (small doses) has not usually been found of much

value. A case of melancholia with high arterial pressure also failed to derive any benefit, but in the case of recurrent melancholia (Case IV.) the results were much more satisfactory. Several times when an attack had begun 5 gr. doses, thrice daily, were ordered, and certainly seemed to act powerfully in mitigating the symptoms and shortening the attack; and the patient on at least one occasion rapidly put on flesh under the treatment.

In four cases the drug was given in large doses for a short time, the patient being kept in bed and treated as if suffering from a mild febrile attack. The cases included two of subacute mania, one of melancholia, and one of paranoia, the two acute cases being somewhat stuporose, with high blood-pressures. The first, that of a patient over a year ill, who had just been treated with suprarenal and showed slight improvement, suddenly became markedly better on being put to bed for the thyroid treatment. Nevertheless it was judged advisable to persist, and she got 375 gr. in 6 days. The temperature, which had been slightly subnormal, rose a little on 2 days, and thereafter continued normal. The output of urea was somewhat increased, but little loss of weight took place. The patient made a good recovery, got fat, and has remained well. In the second case recovery seemed to be directly due to the treatment, during which the patient, a case of nearly 6 months' standing, improved so markedly as to be practically recovered before it ended. She received 530 gr. in 9 days, but never showed a rise of temperature above normal, though the urea and phosphates were increased, and there was a loss of 6 lb. in weight. Thus it appears that the temperature is not a true index of the physical reaction, as used to be asserted. This case also fattened after the treatment, gaining enormously in weight, and has remained physically and mentally well ever since. She seems therefore to be an almost typical example of a successful thyroid cure. The third case was one of climacteric melancholia with delusions, and it was thought that the usually slow progress of such a case might be hastened by thyroid. She received 345 gr. in 7 days, and reacted markedly to the drug, but nevertheless showed no mental change from it. Yet at the end of the year, 9 months later, she

was almost well, and was about to be discharged, so that failure of thyroid treatment does not imply that the case is hopeless, which used also to be stated. The last case was one of paranoia with a weak heart, and the treatment had to be stopped after 160 gr. had been given in 4 days, owing to the occurrence of menstruation, and of a fainting fit. Nevertheless there had been distinct physical reaction, and some slight mental improvement followed. Slight glycosuria in the first case, slight albuminuria in the second (both of which had been observed earlier in these cases), an attack of vomiting, also in the second, and the symptoms in the last case above detailed, were the only *contretemps* deserving mention. The treatment therefore is certainly one that ought to be tried in suitable cases where recovery seems to be hanging fire. Probably melancholia and stupor are the conditions most likely to benefit, and it may be noted that these are states of high arterial pressure, and that the action of thyroid is to lower this.

An extended study of the effect of *suprarenal administration* in seven cases was published last year.[a] The chief conclusions arrived at were that it would be found most useful in conditions of excitement and exaltation, with low arterial pressure, and, therefore, most so in acute mania of fairly recent origin, uncomplicated by stupor; that it is unlikely to be of value in stupor and melancholia; and that although low blood-pressure is an indication for its use, high pressure does not absolutely contra-indicate it. Since this paper was read it has been tried in two more cases; one of acute confusion, as already mentioned, in which the pressure was high, and in which the effect, though not unfavourable, was not sufficient to warrant persistence; and one of acute mania in a rheumatic subject with high arterial pressure (140–150 mm.). This case received 30 gr. of the dried gland per diem for 3 days, 45 gr. for 7 days, and 60 gr. for over 3 weeks; but here also, although progress seemed to be more rapid during administration, the results did not encourage one to continue. It will be seen that these cases bear out the view that high blood-pressure is to some extent a contra-indication.

[a] "On Suprarenal Extract in the Treatment of Mental Diseases." Journal of Mental Science, Oct., 1901.

Erythrol tetranitrate was tried in several cases in which there was high blood-pressure without good result; but in one case of senile mania, with delusions and stupor, it certainly seemed to act favourably, the mental condition clearing markedly. Nitro-glycerine, gr. $\frac{1}{100}$, thrice daily, was given to a patient suffering from minor epilepsy, in whom bromipin had for a time lost its controlling influence on the fits, and who also showed bloodlessness of the extremities. It had a favourable effect, the number of the seizures diminishing, though not very noticeably until the dose had been increased to $\frac{1}{50}$ gr. thrice daily. After about 11 weeks the drug had to be stopped, as it began to produce unpleasant effects, but the number of the fits did not again increase. Bromipin continues to act satisfactorily on the whole with this patient, but in February it was thought to be depressing him, and regular small doses of paraldehyde were tried instead. After about 10 days, however, he developed an attack of ephemeral mania, similar to one three years ago, even to some of the details. Bromide of potassium and ergot were given at once, and may have aided in aborting the attack, which was very short. This mixture was also given, apparently with good effect, in another case of acute mania; but such cases tend at times to get well so rapidly that it is difficult to be sure that improvement is due to the treatment.

Paraldehyde in small doses was also tried in melancholia, with doubtful benefit; but in larger doses, combined with potassium bromide, it has been found very useful as a soporific in cases of this class, and seems to improve the appetite. Glycerine and water, with a strong flavouring of essence of cinnamon, form a convenient vehicle for this drug.

ART. III.—*Colles's Fracture.*[a] By JOHN KNOTT, M.A., M.D., Ch.B., and Dip. Stat. Med. (Univ. Dub.); M.R.C.P.I.; M.R.I.A.; &c., &c.

A GOOD specimen of osseous union of fracture of the lower part of the radius having recently come into my possession, I thought that I would do myself the honour of laying it

[a] Read before the Pathological Section in the Royal Academy of Medicine in Ireland, on Friday, March 21st, 1902.

before the members of the Pathological Section, for whom the fracture which has been indelibly stamped with the name of the great Dublin surgeon must ever possess a perennial interest.

Although the name of Colles is in these countries invariably associated with the usual form of solution of continuity so frequently met with in the lower part of the radius, the frequency of the occurrence of fracture in this locality had long before been pointed out by Pouteau, whose description of the signs of this lesion (*Œuvres Posthumes*, Vol. II.) will be found a vividly graphic picture of its most prominent features. His pithy remark that this is, of all fractures, the one in which an accurate diagnosis can be most certainly made by a single *coup d'œil* has become a surgical aphorism; his theory of the mechanics of the fracture—that it was due to a spasmodic contraction of the pronator and supinator muscles of the forearm—will not find so many admirers at the present day. He very ingeniously compares the bones of the forearm to the segment of a circle, of which the arc is represented by the radius, and the chord is formed by the ulna, and so demonstrates—to his own apparent satisfaction, at least—that the action of the pronator muscles on the curved bone, in approximating the fragments to the ulna, must be to produce lengthening of the broken radius. To this fancied lengthening it is that he attributes the peculiar displacement of the carpus, which he places *first* in his enumeration of the characteristic signs of the lesion. The other typical signs which he mentions in order are: *second*, the tumour on the palmar aspect of the forearm, caused, as he thought, by the contraction of the pronator quadratus, throwing forwards the flexor tendons; *third*, diminished breadth of the forearm at the seat of fracture, produced by the action of the same muscle; which caused approximation of the fragments, and consequent obliteration of the interosseous space; and, *fourthly*, increased size of the wrist, produced by the *mouvement de la bascule*, communicated to the styloid process of the broken radius. He also remarks that it is not necessary to expect much displacement at the seat of fracture, but a depression

of the arch—which is aptly compared to the *lezarde* or *baillement* of architectural ornamentation.

Yet, strange to say, notwithstanding Pouteau's recognition of the importance and frequency of fractures of the lower segment of the radius, we find his teaching on this subject absolutely ignored by subsequent authorities in French surgery for a very considerable period. Boyer does not seem to have been aware of the occurrence of such a lesion; and although he does speak of fractures of the radius produced by falls on the hand, he places the seat of the solution of continuity in such cases at the middle of the shaft of the bone. In Désault's *Journal de Chirurgie* there appeared, indeed, in 1790, a record of a single case of fracture of the lower end of the radius, observed by Horne. But the case is merely noted without further comment, and the writer does not make the slightest allusion to Pouteau's description. Most of the leading surgical authorities of the time followed the old errors; the four luxations of the wrist were unanimously recognised, their characteristic signs pointed out, and appropriate treatment recommended. And it was not till 1820 that Dupuytren—by the immense influence of his writings and clinical lectures—succeeded in convincing his surgical fellow-countrymen of the non-existence of those luxations of the wrist, of which he declared that he had never seen a genuine example throughout the whole range of his enormous experience; and of the great frequency of fractures of the carpal extremity of the radius, which formed a fifth of the total number occurring in his practice. So completely was the work of foreigners in this direction ignored by French authorities that we find Voillemier, in 1842, giving Dupuytren the credit of having *created*, so to speak, this fracture of the lower end of the radius. In the year 1814 the short, but very graphic, description of Abraham Colles appeared in the pages of the *Edinburgh Medical and Surgical Journal;* and, with the exception of the localisation of the plane of the fracture, which he placed an inch and a half above the carpal extremity of the bone, his account of the lesion has suffered but little at the hands of subsequent critics. Colles does not appear to have been aware that any pre-

vious accounts had been published, and wished to call the attention of surgeons to the frequency of the occurrence of a solution of continuity of the lower end of the radius, and the extreme infrequency of the forward (or so-called Désault's) dislocation of the carpal extremity of this bone, for which it had been habitually mistaken. The rapid swelling of the surrounding parts which follows the occurrence of this lesion, and the absence of crepitus—so often hard to elicit in fractures near joints—combined to render the difficulty of ascertaining the true nature of such injuries very considerable indeed. He points out the depression which can be seen about an inch and a half above the lower end of the radius; the swelling, and the backward displacement of the wrist and metacarpus; the fulness on the anterior aspect of the forearm, limited below by the anterior annular ligament of the wrist, and apparently caused by the flexor tendons being pressed forwards; and the projection of the lower end of the ulna towards the palm and inner side, to a degree varying in different instances. The lower end of this bone can be moved backwards and forwards with abnormal facility; but an examination of the radius at the seat of fracture fails to detect either crepitus or yielding of the fragments till extension has been made in such a way as to restore the limb to its natural form. A backward and forward movement will then be found to cause a sensible yielding of the broken surfaces. The inward projection of the lower end of the ulna was attributed by him to the pressure of the upper end of the carpal fragment of the radius—the yielding of the other bone being facilitated by laceration of the ligaments of the inferior radio-ulnar-articulation. Such is Colles's account of the fracture which bears his name. Imperfect it, of course, is; but for an original description, we cannot but admire the sagacity with which he appreciated, and the happy simplicity and clearness of language with which he has detailed, the diagnostic value of the various local signs of this lesion.

The teaching of Pouteau remained, as we have seen, ignored or neglected till the subject was revived by Dupuytren. Somewhat similarly, that of Colles was but

little discussed in these countries till a new interest was given to the subject by the enthusiastic genius of Professor R. W. Smith, of the University of Dublin. Indeed it is to the world-wide influence of the opinions and writings of Dupuytren and Smith that may chiefly be attributed the prominence which has since their time been accorded in the literature of our profession to the discussion of this, the most frequently-occurring, according to some authorities, of all the fractures that are met with in the human skeleton.

While Colles had contented himself with pointing out the comparative frequency of the occurrence of fracture in this position, and the rare occurrence of dislocation, Dupuytren went so far as to doubt—although not, of course, absolutely deny—the possibility of the occurrence of a luxation at the radio-carpal articulation. In this connection, amusing stories are still recorded of the fierce clinical disputes which sometimes took place on the subject, even in presence of the patients, between the hot-tempered surgeon of the Hôtel Dieu and his colleagues, Pelletan and Marjolin; both of whom remained for a long time orthodox believers in the errors which had been impressed on them by their earliest surgical teachers. In one case a man who had fallen on the "heel" of his extended hand was brought into the hospital presenting the characteristic deformity of the lower end of the forearm. The case was critically examined by both Marjolin and Dupuytren. The former arrived at a diagnosis of luxation of the carpus; the latter of fracture of the radius. Neither was disposed to yield one jot or one tittle to the opinion of the other; when an opportunity was afforded of settling the point, by the death of the patient from some intercurrent disease. The autopsy was made in the presence of the two surgical gladiators. The victory remained with Dupuytren.

In the description of this lesion, which the great French surgeon published in the *Lancette Française* in the year 1820, he notices the change in the axis of the forearm, and also in that of the hand—the latter being carried to the radial side by a movement of *abduction de totalité*. The projection of the lower end of the ulna is explained by the

displacement of the hand. He indicates the position of the anterior and posterior tumours; the former of which he refers to the angular projection of the fragments in front, and the latter to the prominence of the carpus behind. He also adds that, in those cases in which an opportunity had been afforded of examining the recent specimen, he had always found the inferior fragment divided by radiating lines into several pieces, as if it had been violently struck with a hammer. To this condition he applied the term *fracture par écrasement*. He places the seat of fracture at two or three lines—up to half an inch—rarely so high as an inch or more, above the lower end of the bone, but makes no reference to any obliquity of the plane of fracture. In his *Leçons Orales*, he dwells with great ingenuity on the remarkable analogy which exists between this fracture and that of the lower end of the fibula, with which the name of Pott is now inseparably associated; and traces the prominent features of resemblance between the two lesions. The abduction of the hand in one case is compared to the eversion of the foot in the other. The projection of the lower end of the ulna has its counterpart in the prominence of the inferior extremity of the tibia; the posterior depression at the seat of the radial fracture is comparable to the *coup de hache* which is observed above the external malleolus in the fibular lesion; while the action of the long abductor of the thumb (extensor ossis metacarpi pollicis) is supposed to have an influence on the carpal deformity, in the lesion of the upper extremity, similar to that which is exercised on the distortion of the foot by the peronei muscles in cases of solution of continuity of the lower segment of the fibula.

The fact that the radius alone gives way is accounted for by Dupuytren by the greater resistance which this bone offers at the time of the application of the force; as this bone, only, articulates directly with the carpus. From this anatomical fact it appropriately received the appellation, which was conferred upon it by the imaginative anatomists of olden times, of *manubrium manus*. This arrangement necessitates the transmission to the radius of all the force which is communicated to the upper extremity by a fall

on the hand. The situation of the fracture at the lower end, in spite of the greater thickness and apparent strength of the bone in that position, will be understood when it is remembered that the whole violence of the fall is at first concentrated on that segment of the radius; and that the increased thickness does not by any means denote greater solidity, as the osseous tissue at the elect seat of fracture is almost purely cancellous. The liability to fracture is also, according to this very observant surgeon, immensely increased by the almost complete impossibility of dislocation. This latter feature is accounted for by the enormous resistance offered by the tendons of both flexors and extensors of the wrist, which are closely applied to the surfaces of the radio-carpal articulation. If, as he believes, the application of a force of 2,000 lbs. would be insufficient to overcome this resistance, a fall on the hand under the ordinary circumstances must fail to do so; as the so-called momentum or moving force, which is calculated by multiplying the weight of a body by its velocity, will not, except in falls from a considerable height, give so large a figure as this. A violent fall on the hand, accordingly, if not followed by a dislocation of both bones backwards at the elbow-joint, nearly always produces a fracture of the lower end of the radius. Sometimes the result may be found to be a severe sprain of the wrist-joint, or fracture of some of the phalanges or metacarpal bones; but such results are not often seen.

This still obscure lesion was made the subject of two very interesting and valuable communications by Goyrand (d'Aix), of which the first appeared in the *Gazette Médicale* in 1832, and the second four years later in the *Journal Hebdomadaire*. This observer lays great stress on an important feature which would appear to have been overlooked by Dupuytren—the obliquity of the plane of fracture. This, according to him, takes, in nineteen cases out of twenty, a direction from above and behind downwards and forwards. He also makes three varieties of the injury:—(1) In which the plane of fracture runs from behind downwards and forwards—by far the most frequent; (2) in which the plane of obliquity passes from the anterior aspect of the bone

downwards and backwards—comparatively rare; and (3) the fracture "*en étoile*" of Dupuytren. In cases of the first type the lower fragment glides upon the inclined plane formed by the oblique surface of the other, and so becomes displaced upwards and backwards; either by muscular action alone, or by the continuation of the violence which had produced the fracture after the solution of continuity had been effected. In the latter case, the displacement would necessarily be much more considerable. At the same time, as the lower fragment is still tied to the ulna by the triangular fibro-cartilage, it is compelled to undergo a rotatory movement, in which it describes an arc of a circle; of which the radius is formed by the said fibro-cartilage, and the centre is at its point of attachment to the base of the styloid process of the ulna. In the course of this double movement, the articular surface of the carpal fragment of the radius undergoes a change of direction; so that, instead of looking forwards and inwards, it becomes inclined backwards and outwards. In the second of Goyrand's types, analogous displacements take place—but in the opposite direction; and with the further modification that the forward translation of the lower fragment is less pronounced than the backward in the other case. The rotation of the lower fragment leaves the articular surface with a more forward direction than exists in the normal condition. With regard to abduction of the hand, he expresses an opinion very strongly opposed to that of Dupuytren, who regarded this sign as one of the most characteristic of a fracture located near the lower end of the radius. Goyrand, on the other hand, regards its occurrence as quite exceptional; and insists that so long as the internal lateral ligament of the wrist and the styloid process of the ulna remain whole, the hand will be found inclined—not outwards, but inwards. He admits that in the rarer cases in which the internal lateral ligament had been torn by exceptional violence, or the styloid process wrenched from the head of the ulna, the axis of the injured hand will be found to have undergone some degree of deviation to the radial side of the forearm.

The mechanism of the fracture is referred by this autho-

rity to *contre-coup*. In a fall on the palm of the hand, the whole weight of the body is thrown upon the latter. The carpus, being broken up into a great number of separate pieces by movable articulations, decomposes the shock, and thus successfully resists it. Then the radius placed between the weight of the falling body and the carpus, supported by the ground, receives the whole transmitted force at its inferior extremity; where, from the extreme sponginess of its structure, it is least able to resist. The opinion of Goyrand on the relative frequency of this fracture is somewhat remarkable. He roundly asserts that the number of cases admitted to the Hôpital d'Aix bore to the collective sum of all other fractures the proportion of one to two. In other words, Colles's fracture, in his experience, formed one-third of the sum total of the fractures occurring in the human body. At the same time he notes that many genuine cases escaped his observation; because the patients often looked upon the injury as a sprain, and did not apply for assistance at the hospital.

(To be continued.)

ART. IV.—*A Series of Cases illustrating the Influence of Utero-Ovarian Trouble in the Production of Intestinal Obstruction.* By JOHN STEPHEN M'ARDLE, F.R.C.S.I.; Surgeon and Lecturer on Surgery to St. Vincent's Hospital; Assistant Professor of Operative Surgery, C. U. I.; Consulting Surgeon, Children's Hospital, Temple-street; Consulting Surgeon, National Hospital, Holles-street; Member of Council, Royal College of Surgeons, Ireland. (Illustrated.)

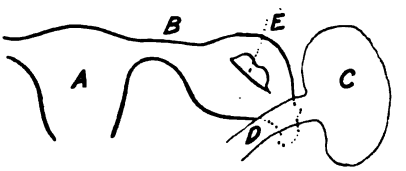
(Continued from Vol. CXIII., page 404.)

CASE II.—Mrs. P., aged 30, was sent to St. Vincent's Hospital with the history of right-sided pain, lasting for three days, and followed by rather sudden collapse. There was tenderness in the right iliac fossa and distension of the abdomen, with obstinate constipation, leading to the notion that she had appendicular trouble. Vomiting had set in early in the case, and was a most distressing symptom. She was four months pregnant. On

examination I found her with a very small, thready pulse, temperature 98°. She was quite blanched and had a drawn, anxious expression. The uterus projected above the pelvic brim, and extending from it to the right iliac fossa, there was an irregular swelling, dull on percussion, and surrounded by a resonant zone corresponding to the cæcum. The centre and upper abdomen were distended and tympanitic. There was vomiting of a brown, thin fluid. Notwithstanding the uterine pregnancy, I came to the conclusion that a rupture of a tubal pregnancy had taken place.

Operation at 11 *o'clock, p.m., April 5th.*—I opened the abdomen in the middle line, and immediately there was a great rush of black blood, followed by the extrusion of great clots. On passing my hand into the pelvis I found it filled with blood clot, which I turned out rapidly. I then clamped the broad ligament on each side of an irregular, lobulated tumour, the centre of which was ruptured (*E*, Fig. 1). The patient was now placed in the Trendelenberg

FIG 1



A Uterus.
B Fallopian tube.
C Cæcum.
D Ileum.
E Rupture.

position and ligatures applied to the broad ligament on the uterine and pelvic sides of the tumour, which I removed. I now passed a glass tube into Douglas's pouch and floated out the remaining clots; and as the patient was very low I filled the abdomen with saline solution, and closed the abdominal wound. The accompanying chart shows the range of temperature and pulse during convalescence. She was sleepless during the night and complained of pain notwithstanding the administration of codein. Vomiting continued at intervals for the first twenty-four hours and then ceased entirely. She passed urine naturally at 3 30 o'clock on the morning of the 6th, and then rather frequently until the 8th.

after which date urination was normal. On the morning of the 8th there was some distension; calomel was administered and some hours later an enema of soap and water, which acted well. After this there was no further distension and recovery was rapid; and, notwithstanding the severity of the operation, the uterine pregnancy was not interfered with. She left hospital on April 30th, and her husband, writing 10 days afterwards, explained that she was gaining strength rapidly and feeling quite comfortable. The position and shape of the tumour are shown in the accompanying diagram, and it is easy to understand how the symptoms pointed to appendicular mischief, and led to the acute intestinal obstruction which brought her to hospital.

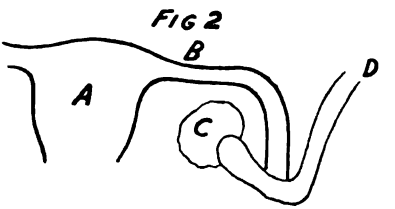
Pulse and Temperature Chart of Case II.

5th	April,	11 p.m.	—Temperature,	98·4°;	pulse,	100.
6th	,,	3 a.m.	,,	98·8°;	,,	100.
,,	,,	7 a.m.	,,	98·0°;	,,	96.
,,	,,	11 a.m.	,,	98·6°;	,,	96.
,,	,,	4 p.m.	,,	99·0°;	,,	100.
,,	,,	8 p.m.	,,	98·8°;	,,	88.
7th	,,	12 night	,,	98·8°;	,,	88.
,,	,,	4 a.m.	,,	98·6°;	,,	88.
,,	,,	8 a.m.	,,	98·2°;	,,	76.
,,	,,	1 p.m.	,,	99·4°;	,,	80.
,,	,,	5 p.m.	,,	98·8°;	,,	84.
,,	,,	9 p.m.	,,	99·0°;	,,	84.
8th	,,	1 a.m.	,,	98·0°;	,,	80.
,,	,,	5 a.m.	,,	98·0°;	,,	80.
,,	,,	8 30 a.m.	,,	98·0°;	,,	82.
,,	,,	12 30 p.m.	,,	98·0°;	,,	72.
,,	,,	4 30 p.m.	,,	99·8°;	,,	84.

CASE III.—Miss L., aged 23, was brought to me, to the Private Hospital, No. 10 Holles-street, on the 6th of May, 1902. She had had frequent attacks of acute intestinal obstruction, and on each occasion the trouble started with pain in the right side, halfway between umbilicus and centre of Poupart's ligament. After some hours of paroxysmal pain the abdomen became distended, later on tender on pressure, and as the case advanced vomiting set in, usually producing extreme prostration. Obstinate constipation attended these attacks, and neither purgatives nor enemata seemed

to influence this condition. I found the cæcum and colon distended, and the small intestines were grouped prominently round the umbilicus and bulged into Douglas's pouch. I found the right ovary enlarged and a confused mass extending from it over the right pelvic brim. Believing this to be an adherent appendix, I opened the abdomen in the right semilunar line and came down on a great mass of omentum adherent to the front of the cæcum. After ligature and section of this the patient was placed in the Trendelenberg position, and I found the appendix bound down to the back of the right broad ligament. A cystic ovary adhered to its tip, while the fimbriated extremity of the Fallopian tube adhered to the prominent angle of a V formed by the bent appendix, as in diagram here shown.

I broke down the adhesions between the ovary and appendix, punctured the cysts, as the body of the ovary was sound, cut through the fimbriated extremity of the Fallopian tube, and, separating the appendix from the broad ligament and side of the pelvis, I brought it into the abdominal incision. I secured the mesentery, which was very vascular, by a chain ligature and removed the appendix in the ordinary fashion. For twenty-four



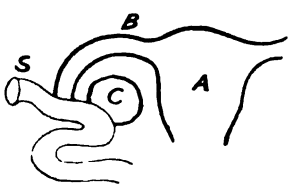
A Uterus.
B Fallopian tube.
C Ovary.
D Appendix.

hours the patient suffered a great deal of pain referred to the right iliac fossa. She had some vomiting and restlessness as a result of ether, but beyond this recovery was uneventful. After three days an enema of castor oil and turpentine was administered with good result. Since that time the bowels have acted regularly, and the patient is now in the most perfect health.

Case IV.—Miss M. M. came to me on April 2nd with the following history:—Four years before she had had a severe attack of

typhoid fever which confined her to bed for several months. During her convalescence, which was slow, she suffered from deep-seated pelvic pain, frequent discharges of blood and pus from the bowel, and, later on, from obstinate constipation. Obstruction at times became so complete that on several occasions her life was threatened. On examination I found the abdomen distended and tympanitic, and a very marked fulness in the left lumbar and iliac regions. The rectum was folded down upon itself so as to produce a condition almost like intussusception, and to the left of the uterus a mass could be felt in Douglas's pouch, which was evidently a displaced and adherent ovary. Along with the symptoms above referred to the patient complained of retardation of the flow of urine, and sub-pubic pain occurred at each evacuation of the bladder. She also complained of a sensation of dragging at the umbilicus, and a weight and sometimes pain in the sacral region. She was very much weakened by the long-continued bowel trouble. She had a quick pulse (80 to 96); it was weak and compressible, and she frequently complained of faintness. After careful dieting, purgation, and disinfection of the bowel she improved sufficiently to justify operation. On April 22nd I opened the abdomen in the middle line, found the omentum adherent to the top of the bladder and anterior abdominal wall, the top of the uterus and the front of the cæcum. I placed a

FIG 3



A Uterus.
B Fallopian tube.
C Ovary.
S Sigmoid.

chain suture across the omentum and cut it free of its attachments. I now placed the patient in the Trendelenberg position, and found the left ovary, three times the normal size, displaced

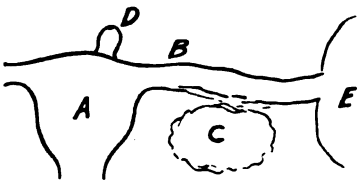
downwards and adherent to a portion of the sigmoid flexure of the colon, which was itself adherent to the bottom of Douglas's pouch. The accompanying diagram, showing the posterior aspect of the uterus, illustrates the condition present in this case. The adhesion between the ovary and sigmoid was so intimate that I was obliged to leave a portion of the ovarian tissue adhering to the bowel. Freeing the ovary, I removed it and the Fallopian tube of that side, broke down the adhesions which fixed the sigmoid in the pelvis, and drew it upwards into its normal position. The cause of the periodic discharges of pus from the bowels became apparent when I cut through what remained of the ovarian tissue. The centre was hollowed out by a tubercular abscess which had evidently perforated the bowel and occasionally discharged its contents thereinto. In this case convalescence was protracted, but from the first the urinary trouble ceased, and mucous discharges occurred from the bowel instead of the muco-pus which flowed so freely before. Three weeks after operation the patient was up and about, and two weeks later she left the Private Hospital greatly increased in weight and suffering from no intestinal inconvenience.

Case V.—Sister T., aged 32, had frequent attacks of intestinal trouble, extending over a period of three years, and for some months complained of scalding and pain during the passage of urine. Evacuation of the bowel was always accompanied by right-sided pain, and there was always a fulness and tenderness in the right iliac fossa. Examination *per rectum* revealed a tumour in the neighbourhood of the right broad ligament and another projecting from the fundus of the uterus. Cystoscopic examination of the bladder showed that the urethra and vesical mucous membrane were normal, except at the right ureter and an area of an inch or so above that spot, which was very red and had large veins showing prominently on the surface. On April 9th I opened the abdomen in the middle line, coming down immediately on a subperitoneal fibroid of the uterus, which I removed, taking a V-shaped piece of the uterine tissue with the tumour. The right ovary, about three times the normal size (as shown in the accompanying diagram), was dark purple in colour.

The Fallopian tube was greatly distended, its fimbriated extremity adhering along the pelvic brim. Adhesions extended

from the front of the broad ligament to the right side of the bladder; all of these parts being very vascular. I broke down the adhesions, brought the ovary and Fallopian tube into the abdominal wound and removed them in the ordinary way. There was very severe pain for forty-eight hours after operation and the urine had to be drawn off at regular intervals, lest any distension of the bladder should increase this trouble. On the third day, owing to tympanitic distension, an enema of castor oil and soap and water was administered with good effect; and from

FIG 4



A Uterus.
B Fallopian tube.
C Ovary.
D Sub-peritoneal fibroid.
E Pelvic brim.

this forward gradual improvement took place. The urinary trouble has entirely subsided, the abdomen has become quite flat, and very little medicine suffices to keep the bowels acting well. The patient has now perfectly quiet nights and convalescence is complete. I am indebted to my colleague, Mr. Fagan, for his kind assistance in the operation and for the accompanying drawing of the very peculiar tumour of the ovary, which was the occasion of all this patient's trouble.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Handbook of the Medical Organisations (chiefly for War) of the Foreign Armies. By LT.-COL. FRANK HOWARD, Army Medical Staff (Retired Pay). Printed for H. M.'s Stationery Office by Harrison & Sons, Martin's-lane, Printers in Ordinary to His Majesty. London: Eyre & Spottiswoode. 1902.

THIS Manual is designed as an aid to medical officers of our army preparing for examination before promotion above the rank of major, for which examination the subject is optional.

It consists of a collection of the army medical regulations of the various Continental powers, and as such contains an immense amount of most interesting information, which should prove of value as a work of reference in the hands of officers seeking administrative rank, but as a pleasant or easy method of acquiring this information we can say little in its favour; in fact our sympathies are with the unfortunate senior officer who, out of such a mass of detail, seeks to form his opinion on the, to him, vital subjects of what is considered the necessary equipment and treatment of a seriously ill or wounded soldier in the field, and how he can best apply the equipment and *personnel* placed at his disposal for the aid of such.

The handbook to be properly understood would require an extended knowledge of the army regulations of the various powers, without which, even as a reference book, its utility is very limited. Presumably the examination of these officers will be directed towards recognising the officer who possesses such a knowledge of the practical working principles guiding such regulations as will assist him to thoroughly understand and make the best possible use of the *personnel* and equipment placed under his orders on active service, and how far he is expected to or justified in acquiring and applying aid available from local sources. We should like to see a

few additions to the handbook which would make it possible to compare the arrangements of the various Governments, in both *personnel* and equipment, for rendering assistance to their sick and wounded in the field. For this purpose the strengths of battalions, regiments, and divisions should be given, also a table showing the number of medical officers, sick attendants, bearers, and ambulances provided for each division of 10,000 men, with their distribution to regimental, bearer, and field hospital units. The British Army Medical Regulations should also be detailed for reference and comparison.

We append a few remarks on the various army regulations, calling attention to the instances where such differ widely from the British, as valuable alterations or additions to our regulations may be suggested, although we must confess that in view of the complete success which attended our arrangements when practically put to so severe a test during the war in South Africa, we are not disposed to think that much is required, and that fundamentally our system must be on sound lines. In this opinion many will coincide who remember the evidence produced before the Special Commission as to how smoothly and efficiently the medical arrangements of the Natal army worked, and that both military and medical authorities bear evidence as to how well the soldier was cared for when sick or wounded. The statement that "never were soldiers so well cared for in war" expresses the opinion of all competent observers. The *personnel* and equipment of the Royal Army Medical Corps attached to the Natal army was in accordance with regulation.

It will be observed how widely the arrangements for affording aid during an engagement differ, particularly as to the number of officers required with regiments, and under whose charge the dressing stations are placed, also how very inadequate in many armies the amount of wheeled transport supplied for wounded appears to be, in view of the very extended front which the battle of the future must present, also the absence of tents, beds, &c., even in some cases from the second line of medical aid, which causes serious reflection as to how the severe cases of illness or wounds are to be cared for in a country where local supplies and equipments are not

available, and the power of evacuation towards the base is very restricted by want of transport.

The position of the pharmaceutist in almost all armies is widely at variance with our system of handing over such duties to a non-commissioned officer, and in view of the almost entire equipment of the field panniers with drugs in tabloid form we fail to see why he should exist in the first line, although probably most desirable at the base. The attachment of veterinary, transport, accountant, administration, commissariat, and religious officers appears in many instances excessive in the first line.

The provision of 600 stretcher bearers per division to supplement the regimental and R. A. M. C. bearers was found necessary in the battles in Natal, where the proportion of casualties to troops engaged, and the battle area, probably approximated to what may be expected on first contact of European armies in future.

The remarks on the various armies can touch but very lightly on each, and does not compare the numbers of non-commissioned officers and men detailed to each as sick attendants and bearers respectively, owing to want of space, although this is a most vital question.

A division is considered to consist of 8,000 infantry. The headquarters and divisional troops are excluded in referring to medical equipment of a division.

AMERICA.

Army Medical School at Washington for instructions of medical officers, officers approaching examination detailed as attending surgeons to medical educational centres.

No definite details for service in the field given, the general outline appears to provide for small regimental hospitals, with two tents for patients, supported by brigade and divisional field hospitals and an ambulance company, the *personnel* and equipment of which are not detailed. No special sanitary officers.

AUSTRIA-HUNGARY.

Medical establishment for war reckoned at two to three officers per 1,000, and one surgeon for each 100 patients.

Officers largely drawn from civil sources, reserve of such retained by annual stipend of from £25 to £40.

1. Regimental medical officers, three per 1,000, with regimental stretcher bearers, giving first aid and providing medical officers to the first assistance, and dressing stations.

2. Field sanitary detachments, providing assistance, dressing, and ambulance stations, officers, three to each ambulance station, where they take over charge from regimental officers, one detachment attached to each division, also 15 ambulances provided by train squadron attached to divisional headquarters. Above provide first aid, dressing, and ambulance, assisted by field sanitary column of German order of knighthood.

3. Field hospitals, assisted by Red Cross wounded transport columns, one to each division, accommodation for 600 patients. Given ten medical officers with one chaplain, three paymasters, four apothecaries, and four officers of troops. It is not stated whether these hospitals are equipped with tents, beds and bedding, but as 24 wagons (four-horse) are provided they presumably are. The above are reinforced by the hospitals of the German order of knighthood.

It will be seen from above that the fighting line has 14 regimental and three field sanitary medical officers to each division, where we provide eight regimental and six bearer company officers. In both cases special arrangements are made for the divisional headquarters and divisional troops as cavalry, artillery, &c. The field hospitals apparently take the place of our field hospitals, stationary, and general hospitals at the front. Field convalescent hospitals are provided, and would be practically desirable.

BELGIUM.

1. Regimental.
2. Ambulance columns.
3. Field hospitals.

No details given of officers or bearers with the regimental units. Details of *personnel* of the ambulance columns and field hospitals show an extraordinary preponderance of "dispenser officers" over the medical officers in each unit. Administration not under the medical officers—a serious

defect. The number of ambulances per division very small. No details as to how many patients each field hospital is equipped for, or as to whether they have tents, beds or bedding, &c.

DENMARK.

No details as to *personnel* and equipment per division given.

FRANCE.

1. Regimental.
2. Ambulance.
3. Field hospitals.

Regimental.—Two medical officers per battalion, each having two sick attendants and 16 regimental stretcher bearers, to be reinforced by the regimental bandsmen.

Ambulances.—One detailed to each division, separate officers for accounts, supplies, and a transport officer and veterinary surgeon; no dispensing or pharmaceutical officer. In all six officers per division doing special duties which are performed by medical officers or non-commissioned officers of the R. A. M. C. in British service. The number of ambulance wagons provided is much below that of the British. In the field hospital seven medical officers and three administration officers per 100 beds appear excessive, unless their services are designed to aid in locally procuring shelter and equipment, as neither tents nor beds are included. These hospitals are apparently intended to take the place of our general hospitals after a battle, and as such are very inadequately equipped. There is no provision for transport of arms, accoutrements, and kits of sick and wounded—a very important practical question which appears to have been overlooked in the regulations of all the armies.

GERMANY.

1. *Regimental.*—Two officers with regimental stretcher and bearers.

2. Bearer companies, one to a division, with seven medical officers, a paymaster, and apothecary. The train is under three officers, and only eight ambulances are provided. These companies form dressing stations, and bring the wounded from the regimental collecting stations.

3. Field hospitals for 200 beds, six to a division, each with five medical and four official officers. The equipment includes sheets and coverlets for patients, but no beds, bedding, or tents. Equipment and transport for evacuation dependent on requisition. Tents may be obtained from equipment of killed and wounded.

4. War hospitals on lines of communication.

HOLLAND.

A bearer company to each division, divided into a dressing station detachment, with ambulances, and a field hospital. The distribution of the officers is not given, no mention of regimental officers, and number of ambulances not stated.

ITALY.

1. *Regimental.*—Seven medical officers to 3,000 men, and 12 bearers.

2. *Medical Section.*—One to a division, with six medical officers, one accountant, bearers, attendants, and medical train of eight ambulances, and four two-wheeled vehicles.

3. Field hospitals of 200 beds, seven medical officers, accountant, apothecary, and chaplain.

JAPAN.

1. *Regimental.*—Six officers and one transport officer, with attendants and regimental bearers to regiment, presumably of three battalions, who give aid in the fighting line, and form regimental dressing stations. Collecting stations.

2. Medical staff corps divided into a centre, and two bearer companies. The bearer companies are under a company officer, and give assistance in the field under the direction of the regimental medical officers. The centre forms three dressing stations, which are divided into forwarding, operating, and dressing sections, for which purposes the large staff is provided—*i.e.*, eight medical officers, one transport, one pharmaceutist, one commissariat.

3. Field hospitals, six to each division, each with six medical officers, one pharmaceutist, one commissariat, the number of beds each is equipped for is not stated, but no tents or beds are provided.

The above gives the enormous total of 56 medical officers, assisted by 14 other officers, to each division, and as tents or beds are not provided to the field hospitals, they apparently are only expected to provide temporary treatment.

MEXICO.

Has a medical staff which supplies divisional ambulances and field hospitals, the disposal of which, in war, is not detailed. The former is commanded by Lt.-colonels, with eight majors and eight cadets, and a very small *personnel*. The field hospital number of beds not given; has six majors, a veterinary major, two administrative officers, two transport officers, commissariat officer, and two captains (pharmaceutists), and appear to be equipped with hospital tents, whilst the ambulance transport is not detailed, nor are any regimental medical officers mentioned.

PORTUGAL.

Apparently possesses a regimental medical staff, whilst each division has two dressing stations, two ambulance posts, and a field hospital—in all the medical officers are few in number. The pharmaceutical officers numerous; administrative and other officials in numbers, and ambulances few.

RUSSIA.

1. Regimental medical establishments, including hospitals and ambulance wagons, from which the *perscnnel* in war provides dresssing stations.

2. *Sanitary Division.*—Each division has a *divisional hospital*, with five medical officers, acting as our bearer companies, and two mobile field hospitals, and having eight ambulance wagons (two-horsed). These hospitals have nine officers, three of them administrative, are supplied bedding and hospital clothing for 200 men each, tents for 60 men, but no beds.

3. Two mobile field hospitals are in reserve for each division.

4. Sanitary convoys, with officers and two medical officers, and 27 four-horsed ambulances, are provided for evacuation of above.

FRED. HEUSTON.

The Causes of Death among the Assured in the Scottish Widows' Fund and Life Assurance Society, from 1874 *to* 1894 *inclusive.* Reported by CLAUD MUIRHEAD, M.D., F.R.C.P.E.; Medical Officer of the Society. Edinburgh: R. & R. Clark. 1902. Pp. 82.

IT was formerly the custom in the Scottish Widows' Fund to have a report on the mortality among its members presented by the Medical Officer every seven years. The last report was drawn up in 1874 by the late Dr. J. Warburton. His death, and that of his successor, Dr. William Begbie Robertson, caused an interruption in the preparation of the reports, but this is made up for by the appearance of the able document before us, in which the present principal Medical Officer deals with the mortality for twenty-one years—that is, from 1874, when the last report was made, to 1894. During these years the deaths amounted to 9,791—9,163 males and 628 females. This number exceeds by 4,158 the total deaths from 1815, the date of the foundation of the Society, to 1873. The increase is explained partly by the greatly augmented membership and partly by the advanced age of the Society. In the present report the mortality among males only is considered. The diseases to which the mortality was due are arranged in thirteen classes. Each of these diseases is considered separately for each septennium, and the results are grouped in chronological order. In some cases, particularly in those of consumption and cancer, the total mortality during the twenty-one years has been considered as a whole. "Consumption carries off our younger members in largest numbers, the average age at death being forty-two, and during the twenty-one years under observation the mortality from it has happily been annually decreasing; while cancer attacks, by preference, those of advanced years—the average age at death being sixty—and the mortality due to it has been steadily on the increase." The increasing age of the Society will explain why the diseases of advanced life should cause an increasing number of deaths.

In the first class, or that of zymotic diseases, typhoid fever caused by far the largest number of deaths—namely,

175, or 1·91 per cent. of the total mortality. In the three septennia the percentage of deaths among those at risk was very steady, being ·0322, ·0283, and ·0281 respectively, while in the twenty-one years 1874 to 1894 it was ·0292. The average age at death was 42·265 years. This is higher than might have been expected, the most common age among the general public being between thirty and forty. Of the fatal cases 62 per cent. died under forty-five, 29 per cent. between forty-five and sixty, and only 9 per cent. at and over sixty years of age. As contrasted with the deaths of males from typhoid in England, as shown by the Registrar-General's returns, the mortality of the Society ranks high. A very large percentage, too, of the deaths occurred during the early years of the members' assurance. The deaths in England were 93, in Scotland 34, and in Ireland 48.

From typhus England lost four members, Scotland six, and Ireland eleven. "Adding the deaths from these two fevers, and comparing the number per cent. in each nationality, according to their total mortality, we find that Ireland exhibits a mortality from these causes nearly double that of England, and nearly thrice that of Scotland. Thus:—Deaths from enteric and typhus fevers—

Ireland, 3·94 per cent. of her total mortality.

England, 2·07 per cent. of her total mortality.

Scotland, 1·35 per cent. of her total mortality."

Rheumatic fever is another zymotic disease which caused considerable loss to the Society, causing the death of 58 members, of the average age of forty-one. Their total expectation of life at entry was 1,920 years, while they aggregated only 560 years, or less than one-third of their anticipated after-life. Only 7 per cent. of the deceased members gave a family history pointing to a tendency to rheumatism. In 30 per cent. the fatal illness had been preceded by one or more previous attacks. About 20 per cent. were complicated with heart disease, and 12 per cent. with meningitis. It is suggested as possibly a wise rule to exact an extra premium from all proposers who have already suffered from an attack of acute rheumatism, or to cause them to assure on the endowment assurance scale.

Great interest attaches to the mortality from cancer (placed in Class II., diseases of uncertain seat), owing to the widely spread idea that this disease is becoming more common than it was formerly. Unfortunately, the justice of this idea is amply borne out not only by the returns of the Registrar-General, but by those of the Society. By the former it appears that the annual mortality from cancer in England among 10,000 (males) living, at all ages, was in the period 1861-70, 2·42; in 1871-80, 3·12, and in 1881-90, 4·30; and while in 1861 deaths from cancer represented 1 in 102 deaths from all causes, in 1890 they equalled 1 in 41. The deaths from cancer of assured males were 122 from 1874 to 1880, 165 from 1881 to 1887, and 252 from 1888 to 1894. The percentages of deaths were 4·935, 5·440, and 6·889 respectively; while the average age at death was 61·980, 59·819, and 59·985. Thus the mortality shows a considerable increase, and the age at death a decrease. Our space will not allow us to follow Dr. Muirhead in his careful and able analysis of these and other data, but we give merely his conclusions, which appear to us to be incontrovertible.

The registered increase in the number of deaths from cancer is undoubted. After making every allowance for improved diagnosis, there remains a large real increase to account for the large and progressive mortality from this disease.

"The age period at which death from cancer is most frequent is gradually declining according to the Scottish Widows' Fund Returns. The average age at death from cancer among the members declined by two years from 1874-80 to 1880-94, as contrasted with a rise in the average age at death from all causes of a little over two years.

"The office returns mark a *decrease* in deaths from *internal* cancer of 7·70 per cent., and an *increase* in deaths from *external* cancer of 18·89 per cent. of the percentage in the First Septennium as contrasted with the Third."

The returns throw little light on the question of the heredity of cancer, for although only 8 per cent. of the members who died of cancer stated that near relations had died

of malignant disease, the high age at which deaths from cancer occur would prevent the family history from being complete at the time of making the proposal. As, however, the general consensus of opinion assigns a certain importance to heredity, it is suggested that if a proposer desires a policy on the endowment scale, maturing at forty-five or fifty, family history may be ignored, but if the endowment policy is to mature at a later age, or if a whole life policy is asked for, "the best way of treating such a proposal would be to accept it on the endowment scale at age fifty-five or death."

Of, perhaps, even greater interest than cancer is consumption, which is placed in Class IV., diseases of the respiratory system. During the twenty-one years under review it has caused the death of 806 members, or 8·796 of the total mortality.

The returns of the Registrar-General show that the death-rate from consumption among the general population decreased 16 per cent. in 1881-90 as compared with 1871-80. A corresponding decrease among the assured was not to be expected, because the lives are carefully selected, and because the decrease in the general mortality took place chiefly at early ages prior to those at which lives are commonly assured. Nevertheless, the statistics of the Society show that the death-rate among the members decreased 15 per cent. from 1874-80 to 1881-87, and 27 per cent. from 1874-80 to 1888-94. The death-rate for consumption is greatly below that of the general population, showing the care and judgment shown by the officials in the selection of candidates for admission into this great and beneficent Society. The returns show, further, a steady increase in the age at which deaths from phthisis occur, and it is conclusively demonstrated that this increase is real and not merely due to the increasing age of the Society. It is further shown that consumption is not exclusively a disease of youth, the mortality from forty-five to seventy-five years of age being very considerable.

Still the mortality from consumption among the assured is too large, and while the value of selection is fully admitted, the fact that 15 cases of death occurred within a

year after assuring shows that the selection is probably not in all cases strict enough. Suggestions are made as to how this may be improved by attention to the presence of habitual cough, of dyspeptic troubles, by careful examination of the pulse, of the temperature in suspicious cases, and a careful consideration of the ratio between height and weight—a too low weight being much more common in the consumptive cases than in the non-consumptives; while a history of progressive emaciation should always excite suspicion. The question of the importance of family history is made the subject of a prolonged discussion. It is admitted that the discovery of a tubercle bacillus compels us to place less weight on heredity than was formerly done, but as everyone is exposed to infection, while only some contract the disease, there must be something in the individual which determines his vulnerability. This tendency to infection would appear to run in families, and to be capable of transmission from parent to children. "Therefore, we are not entitled, because too much has been made of this inherited vulnerability in the past, wholly to ignore it, and to treat it as a negligible quantity. Experience and statistical researches both go to prove that such a proceeding would be as unwise as it would be in contradiction to their teaching."

We are obliged to omit all notice of the other diseases, and of the numerous questions discussed in relation to them. But in concluding we would direct the attention of all our readers who are interested in vital statistics to this most important and interesting report, and congratulate the members of the Society on the results which it places before them.

Medical and Surgical Reports of the Boston City Hospital. Eleventh Series. Edited by H. L. Gurrell, M.D., W. J. Councilman, M.D., and Charles F. Withington, M.D. Boston: Published by the Trustees. 1900.

We naturally expect a record of good work in a Boston Hospital Report, and in this case we are not disappointed.

The reports of the different departments are excellently arranged, so that from the rich store of information they contain the reader may glean a fair-sized sheaf of hints. Each report tells of good work, and a great deal of it carried out thoroughly without any sparing of personal trouble and foresight. Of the contributed articles all are interesting, and each one will well repay reading; they treat of injury of the spinal cord, diphtheria, pancreatitis, malignant endocarditis, thyroid tumours, and so-forth. The student of medicine, qualified and unqualified, will find the volume a very storehouse of medical information, agreeably told and excellently edited.

Down District Asylum. Resident Medical Superintendent's Report for the Year ended the 31st December, 1901.

THE Report shows a state of things which must be gratifying to all connected with this institution. The number of admissions has fallen—a fact to which, as Dr. Nolan points out, overmuch importance must not be attached. It is satisfactory to find that in 99 out of 115 cases admitted physical causes of the disease could be assigned, a fact which probably implies a better prospect of recovery. Although only 6 cases were ascribed to alcoholism, great (perhaps excessive) stress is laid upon this factor in the ætiology; but it is well that this should be done, so long as it is sufficiently understood that alcoholism is often merely the sign of an unstable nervous organisation, rather than its cause, and should, therefore, be treated on the same principles as other such manifestations.

The percentage of "recoveries on admissions" reached the gratifying figure of 47. The death-rate was 9·5 per cent. on the daily average number resident, and the deaths were all but one due to natural causes, phthisis and heart disease accounting for nearly half.

The cost of maintenance is still lower than the average for all the Irish Asylums, notwithstanding the liberality of the Committee in improvements, and the expenses wisely incurred in the hospital treatment of the recent and curable cases. Not only is it the duty of such institutions to spare no outlay which is calculated speedily to restore the patients to

the ranks of the useful members of society, but this course represents the truest economy of the ratepayers' money, since if it be followed there will be fewer cases such as that mentioned, of a patient who in a long lifetime cost the community no less than £900, apart from the loss of his work as a useful citizen. As tending in this direction also, we hope that Dr. Nolan will soon be able to carry out his wishes as to increased night supervision, which has worked so satisfactorily in some of the Scotch and English Asylums. And we notice with lively satisfaction the action of the Committee in supporting the establishment of a central laboratory for research in the pathology of insanity, which, as Dr. Nolan says, "is eminently creditable to their appreciation of scientific effort to determine the physical basis, and thereby limit the increase of mental disorder." The purchase of a new farm, the erection of an infectious isolation hospital, and other works, also show that all concerned are alive to their responsibilities and determined to fulfil them.

Elementary Text-book of Zoology. By ARTHUR T. MASTERMAN, M.A. (Cantab.), D.Sc. (Lond.), D.Sc. (St. And.), F.R.S.E.; Lecturer on Zoology and on Biology in the School of Medicine of the Royal Colleges, Edinburgh; Joint Author of "The Life-History of the British Marine Food-Fishes;" Examiner in Biology to the Royal College of Physicians, Edinburgh, etc. Second Edition. With 411 Illustrations. Edinburgh: E. & S. Livingstone. 1902. 8vo. Pp. xxiii. and 628.

THE Preface to the first edition of this really beautiful work bears the date of May 1st, 1901; that of the present edition is April 9th, 1902. This is in itself evidence that Dr. Masterman's book has filled a gap in scientific literature. The work is divided into two parts. The first part deals in separate chapters with the general facts and principles of the subject, and its relationship to kindred sciences. In Part II. the student is expected to study the types of each group in the museum, or in the laboratory, as the case may be, and then to proceed to the generalisations under each phylum or class. The author points out that this

must ever be the natural way of learning the subject, and so it has been adopted in his book.

One of the features of this work is the profuseness with which it has been illustrated. The text includes no fewer than 398 figures, representing anatomical and physiological details or pictures of various animals, and there are besides thirteen full-sized coloured plates, illustrative of the various stages of dissection of the skate, frog, pigeon and rabbit respectively.

Part I. is headed General Zoology. It embraces ten chapters. Of these the first is devoted to a consideration of "Living Matter." The primary and secondary functions of Protoplasm are discussed, and also the differences between plants and animals. It is shown that plants can build up their protoplasm from simple compounds, such as carbonic acid, water, and mineral salts, all of which are soluble and diffusible, either as gas or liquid, but that this building-up certainly requires a supply of radiant energy from the sun's rays. The animal kingdom, on the contrary, is entirely dependent (or parasitic) upon the vegetable kingdom for all its energy. And then follows a sentence which would have supplied the sun-worshippers of old with a reason for their faith. "We must therefore look to the sun as the sole source of every movement, thought, or impulse of the animal creation." But there is a step further, and the sun acknowledges *its* Master, and human thought its mere finite range.—"We know life only by its effects, not in itself, and the student should ever bear in mind that just as the physicist has to assume the fundamental conceptions of matter and motion, so the zoologist, the biologist, and the physiologist, have to start with the assumption of life and its vital phenomena. The attempt to explain these premises in each case is mere speculation." (Page 13).

Successive chapters in Part I. are devoted to comparative physiology, comparative morphology, histology, growth and reproduction, comparative embryology, geographical and geological distribution, that is, the distribution of animals in space (chapter vii.), and in time (chapter viii.); "bionomics," or the study of the relationship of an organism

to its environment, in the widest sense; and heredity and descent. The chapter on bionomics is illustrated by four beautiful and most striking instances of protective resemblance and mimicry.

Part II. begins at page 85, and constitutes by far the largest portion of the book. It includes twenty-one chapters in which animal life is fully and clearly described from its simplest to its most complex forms, from *Protozoa* to *Mammalia*.

Dr. Masterman writes well, and expresses himself clearly and in simple language, *as a rule*. Chapter xxxi. on the geographical distribution of mammalia, however, bristles with long and difficult technical terms. It is true that most of these had been previously defined in earlier sections of the book, but we could have wished that the author had clothed his account of the three zoological realms—Notogœa, Neogœa, and Arctogœa—in simpler phraseology. The subject is one of universal interest, and the story of the present geographical distribution of mammals would not have lost by being told in language "understanded of the people."

A Hero of Donegal: Dr. William Smyth. By FREDERICK DOUGLAS HOW. London: Isbister and Company, Ltd. 1902. Cr. 8vo. Pp. 146.

A PATHETIC tale, well told, of the heroic life and death of a manly and humane Irish dispensary medical officer. The story of William Smyth's devotion to the poor fever patients of Arranmore still rings through the land, but in this book Mr. How shows that the whole life of his hero was cast in the same mould, and that as he died so had he lived.

Mr. How evidently possesses literary powers of no mean order, and his book is much more than a biography of the devoted "Doctor" of Roshine Lodge. It arouses our interest in both the people and the scenery of the wild Donegal coast, while one of its most charming features is the strict impartiality of the author in writing about religious or political topics.

A "Hero of Donegal" truly was William Smyth! But he will not have laid down his life in vain if his tragic death directs public attention to the extraordinary endurance and self-denial which the daily work of the average Irish dispensary medical officer calls into being. Is it not a crying shame, and even a national disgrace, that no Compulsory Superannuation Act for Ireland has as yet been placed upon the Statute Book? The dispensary medical officers must either lay down their lives as William Smyth laid down his life, or else labour on to extreme old age in failing health and strength, because no provision is made for them by the country which they serve.

Nervous and Mental Diseases. A Manual for Students and Practitioners. By CHARLES S. POTTS, M.D.; Instructor in Nervous Diseases, University of Pennsylvania, &c., &c. London: Henry Kimpton. 1901. Pp. 8, 437.

THIS well-produced little work represents an attempt to deal with the whole of neurology and psychiatry, including nervous anatomy and physiology, in the compass of about 400 not very closely printed duodecimo pages. (We say "about 400" advisedly, as, although the pages number 437, the work begins, for some extraordinary reason, with page 19.) The chapter on nervous anatomy, with which it opens, although sketchy, contrives to give a wonderfully clear account of the general structure of the nerve-centres, especially of the sensory and motor tracts. Only two pages are devoted to General Pathology, and then follow chapters on General Symptomatology and General Therapeutic Measures (including electricity, massage and exercises, hydrotherapeutics, and rest-treatment), which give as good an account of the subjects as could be expected in the space. The remaining chapters, dealing with the clinical varieties of nervous disease, are accurate and up-to-date, so far as examined, and include short but proportionately sufficient sections on pathology and treatment. The general impression given is, however, that of excessive condensation, and if the author had not tried to include quite so much the book would probably have gained. As it is, one

is rather reminded of a somewhat elaborated notebook, and as such it would no doubt prove useful, especially to those who have already some knowledge of the subject. Otherwise, although not a bad book, we do not see that it possesses any very marked advantage over the nervous section of any good general manual of medicine. The illustrations, mostly diagrammatic, are well-selected, clear, and sufficient in number. The portion of the work dealing with mental diseases, which occupies only 43 pages, shows the faults of condensation in an exaggerated degree, with the addition of confusion and frequent inaccuracies and mis-statements. It would have been better to omit it.

Photographic Atlas of Diseases of the Skin. By GEORGE HENRY FOX, A.M., M.D. Parts XIII. to XVI. (completing the work). Philadelphia and London: J. B. Lippincott Company. 1901-1902.

THE four parts of this splendid Atlas now under review complete the work, and we offer the author our hearty congratulations on the manner in which he has carried out his self-imposed task.

The diseases commented on in Parts 13, 14, 15 and 16 run in alphabetical order from "pityriasis" to "zoster," the commentary occupying 56 large quarto pages of letterpress.

The illustrations in these four parts represent in sequence eczema impetiginosum, erysipelas faciei, hereditary syphiloderma, elephantiasis, xanthoma, lepra tuberculosa, mycosis fungoides faciei, psoriasis exfoliativa, dermatitis exfoliativa, favus, epithelioma rodens, eczema manus, syphiloderma manus, rosacea hypertrophica, papilloma lineare, erythema bullosum, scabies, dermatitis venenata, urticaria, seborrhœa, steatoma, and milium.

It may be well to remind our readers that Dr. Fox's Atlas includes a series of eighty plates comprising more than one hundred photographic illustrations, with descriptive text, and a treatise on cutaneous therapeutics. The Atlas consists of sixteen parts or fasciculi, beautifully printed on thick paper and in large type. It reflects the greatest

credit on the talented author, and also on the publishers, Messrs. J. B. Lippincott and Company, of Philadelphia, and now also of London.

L'Art et la Médecine. Par le DR. PAUL RICHER, de l'Académie de Médecine. (1 volume in-4° de 562 pages, illustré de 345 reproductions d'œuvres d'Art. Paris: Gaultier-Magnier et Cie, éditeurs.) 1902.

IN this superb volume, completely novel both in its subject-matter and as regards the works of Art reproduced in its pages, Dr. Paul Richer discusses in a masterly fashion the numerous bearings which have at all times subsisted between Art and Medicine, whether artists have portrayed the sick, deformed or grotesque, or have depicted physicians themselves, barbers or surgeons. With a pen as ready as it is learned, Dr. Richer from this point of view recounts a kind of history of Art from the time of the Greeks to the present day, at the same time that he causes to pass in procession before our eyes the chefs-d'œuvre of those masters who—forerunners of modern science as they were—have often forestalled it by an accurate portraiture of the sick.

This book is at once amusing and learned. It is one which places us thoroughly in possession of the side-lights of the intimate or inner life of former days.

A Manual of Obstetrics. By A. F. A. KING, A.M., M.D., Professor of Obstetrics and Diseases of Women and Children in the Medical Department of the Columbian University, Washington, D.C., and in the University of Vermont, &c., &c. Eighth Edition, revised and enlarged. London: Henry Kimpton. 1901. Pp. xxv. and 612. With 264 Illustrations.

THE present edition of Professor King's well-known manual does not present any very great differences from the previous editions, and consequently does not call for much comment. Some statements have, the author says, been modified in conformity with modern thought, several

omissions have been supplied, and some additional illustrations have been added. It would, perhaps, have been well if more radical alterations had been made, as the book is decidedly old-fashioned in many places. However, it is not possible to find much fault with a work which has passed through eight editions in less than twenty years. There are few more modern books of its class which will ever be able to boast of so creditable a record.

Essentials of Diseases of the Nose and Throat. By E. B. Gleason, S.B., M.D. London: Henry Kimpton. 1901. Pp. 240.

This is now the third edition of this book, compiled in the form of question and answer. The utility of this method of presenting a subject may be open to question, but the author seems to have asked and answered the questions in a clear and concise manner. Unfortunately, some parts of Rhinology do not lend themselves to this abrupt treatment, and here the author has failed to so put his subject as to render it capable of assimilation by the average senior student. Too much space has been devoted to instruments and operations for which the general practitioner can have hardly any use, as the opportunities in his practice must be limited, and would hardly justify the expense of their purchase. The chapters on Adenoids, Laryngeal Paralysis, and Diphtheria are good, but that on the Accessory Sinuses must, as has been mentioned above, be considered too short to give a fair idea of the principles involved in their differential diagnosis.

Diseases of the Nose and Throat. By J. Price-Brown. M.B., L.R.C.P.E. London: Henry Kimpton. 1901. Pp. 471.

Yet another book, to be added to the already long list of works on the Nose and Throat, comes before us, and it is difficult to see how they can all be of use. There are some good points about this new effort, but at the same time one must condemn other features, notably that of allowing

the frontal sinus disease to fall to the ground. The diagnosis of frontal sinus disease is just as much the work of the Rhinologist as is that of the Sphenoidal, and one completely fails to see why it was left out. The good points of the work are mainly that the decimal system has been followed in writing prescriptions as well as giving the doses in the old measures, and the chapters on Mycosis and some of the operations are worthy of study. The work has been specially prepared for the general practitioner, and contains hints and ideas that will be useful to many who have not time to study the subject in larger and more complete works.

General Index to the Transactions of the Pathological Society of London for Vols. XXXVIII. to L. 1887-99. London: Smith, Elder and Co. 1901. 8vo. Pp. vi. and 196.

THIS is the fourth General Index which has been issued since the foundation of the Society in 1846. It includes the communications made during thirteen years, 1887 to 1899, both inclusive, and refers to Volumes XXXVIII. to L., inclusive. The compilation of the Index was entrusted by the Council of the Pathological Society to Mr. S. G. Shattock, and he has fulfilled his troublesome task with great success. The material has been arranged in sections as follow:—General Subjects, Teratology, Comparative Pathology, Comparative Teratology, Bacteriology. The list of authors has been published separately at the end in place of being intercalated, as in the previous indexes, in the general work. In the General Index, however, the name of the author is inserted in every case after each communication, as heretofore.

A list of illustrations, extending over nearly 17 pages, is another feature in this Index.

At the time of publication of the third General Index in 1887, the Council of the Society hoped that on the issue of the fiftieth volume a General Index of the whole series might be appropriately made. Ways and means, however, failed, and so this project was not carried out.

Fortunately, the four General Indexes which have been published, remove all pressing need for so elaborate and costly an undertaking.

Dose-Book and Manual of Prescription-Writing. With a List of the Official Drugs and Preparations, and many of the Newer Remedies with their Doses. By E. Q. THORNTON, M.D., Ph.G.; Demonstrator of Therapeutics, Jefferson Medical College of Philadelphia. Second Edition, revised and enlarged. London and Philadelphia: W. B. Saunders & Co. 1901.

IN this second edition of his useful manual Dr. Thornton has made additions to the chapters on "Prescription-writing" and "Incompatibilities," and appropriate references have been introduced in the text to such of the newer curative serums, organic extracts, synthetic compounds, and vegetable drugs as have been found to be of value. Chapters on "Synonyms" and on "Poisons and their Antidotes" have been added to the Appendix.

The author tells us in his preface that he has spared no pains to bring the volume up to date, and we congratulate him on the successful attainment of the object of his ambition. As it now lies open before us we regard this very convenient and well-printed octavo of 362 pages a model of condensed information judiciously arranged, and all expressed in style and language of crystalline transparency. We cordially recommend it for the use of both practitioners and students.

The Medical Annual. A Year-book of Treatment, and Practitioner's Index. 1902. Twentieth year. Bristol: John Wright and Co.

THE present number of the Year-book is in no way inferior to the preceding numbers that made the reputation of Wright's Annual as a convenient and trustworthy guide to modern practice. The sectional editors, by careful selection and editing, give the reader the pith of the medical literature of the year, so arranged that the desired

information is found without difficulty. The volume bears evidence to the value of the X-rays in medicine and surgery, and in some six pages Dr. John Macintyre gives a very excellent article descriptive of the manner of using the X-ray apparatus to the best advantage. He then considers the application of the X-rays in diagnosis and as a therapeutic agent.

The volume contains numerous illustrations, 25 plates, and 81 diagrams. Nothing has been left undone to retain the good opinion of the medical profession. In the Annual they have a Year-book in which every province of medicine is dealt with by experts, who by letterpress and illustration leave nothing undone to make the book helpful to the practitioner.

Transactions of the American Surgical Association. Vol. XIX. Edited by RICHARD H. HARTE, M.D.; Recorder of the Association. Philadelphia: W. J. Dornan. 1901. Pp. 514.

THE copy of the "Transactions" before us shows that the excellent standard of the papers hitherto read at the meetings of the American Surgical Association is well maintained.

Last year the volume of the "Transactions" was practically a treatise on Abdominal Surgery. This year, although abdominal surgery is well represented, a greater variety of papers will be found, such as the President's Address on "The Recent Buffalo Investigations Regarding the Nature of Cancer," "Late Results of the Treatment of Inoperable Sarcoma with the Mixed Toxins of Erysipelas and the Bacillus Prodigiosus," by Wm. B. Cohy, M.D.; "The Value of Blood Examination in Appendicitis," "Blood Changes Induced by the Administration of Ether," "Blood in its relation to Surgical Diagnosis." A study of these three papers on the examination of the blood will be of great value to the surgeon, especially the scientific one, but it should be followed by a careful perusal of the essay by John B. Deaver, M.D., of Philadelphia, on "The Examination of the Blood in Relation to Surgery—of Scientific,

but often of no Practical Value, and may Misguide the Surgeon." About one-fourth of the volume is thus devoted to the pathology of the blood in relation to surgery.

Abdominal Surgery is represented, amongst others, by excellent papers on Pancreatitis and the Surgery of Chronic Ulcer of the Stomach, by Mr. Mayo Robson, of Leeds; a very good paper by Theodore A. M'Graw, M.D., of Detroit, on "Two Cases of Vicious Circle after Gastro-Enterostomy," and a paper on "Phlebitis following Abdominal Operations," by Albert van der Veer, M.D., of Albany.

An excellent paper on Fractures and Dislocations of the Spine also appears, in which will be found an accurate and concise description of the operation of Laminectomy, the performance of which is recommended in every case of fracture and dislocation, provided the condition of the patient is such as to justify any operation, the operation to be regarded in the first instance as an exploratory one.

Others papers will be found of importance on the Radical Cure of Femoral and Inguinal Herniæ, on the Radical Cure of Umbilical Hernia (illustrated), the Treatment of Aneurysms of the Aorta, and on the Treatment of Arterio-Venous Aneurysm.

An extended and critical notice of such a publication is unnecessary. We strongly recommend the volume to the study of the practical surgeon.

The Four Epochs of Woman's Life: A Study in Hygiene. By Anna M. Galbraith, M.D.; with an Introductory Note by John H. Musser, M.D., Professor of Clinical Medicine in the University of Pennsylvania. Philadelphia: Saunders & Co. 1901. Pp. 200.

The work before us does not afford a pleasant subject for review. It is quite impossible to say for whom it is written, as it is valueless to a medical man, and unsuitable to place in the hands of the general public. It is badly written; many of its statements are quite incorrect, and in places its teaching is completely opposed to the moral

sense of the great majority of the civilised world. One extract from it will suffice:—"Children born during the first year of married life seldom equal in health the children born of the same parents later; they are not only apt to be sickly, but the liability to premature death is greatly increased. For this reason it is better that the first year of married life should be allowed to pass without conception taking place." All through, this work strikes us as being the production of a woman whose moral sense has been blunted by the smattering of a medical education. We very much regret that it has been issued under the *imprimatur* of a Professor in the great University of Pennsylvania, as it is not only an unnecessary production, but one for the existence of which it would be difficult to find any justification or more than one reason.

A Manual of the Practice of Medicine. By GEORGE ROE LOCKWOOD, M.D.; Attending Physician to Bellevue Hospital, New York. Second Edition, revised. With 103 Illustrations, many of them in colours. Philadelphia and London: W. B. Saunders and Co. 1901. Pp. 847.

THIS is a good text-book for students, and is a very suitable work to read for examination purposes. It is clearly written and excellently illustrated. Indeed, the temperature charts (which are printed in colours) are the best that we can recall to mind. There are many excellent diagrams, illustrating the signs of heart and lung diseases, and the effects of lesions of the nervous system. Many tables of differential diagnosis have been introduced. The sections on treatment are clear and practical, and are sufficiently detailed, many prescriptions being printed in full. The work is concise; unnecessary matter has been wisely omitted—thus the book is easy to read. In fact, the work is about one-half as long as Professor Osler's well-known treatise, a difference which is of the utmost importance to students engaged in making up medicine.

The style is easy, and the paper and printing first-class. As a book of reference for practitioners it is, perhaps, not

so suitable as some of the larger works. Still there are few who will peruse its pages without deriving some benefit therefrom.

A Treatise on Surgery by American Authors. For Students and Practitioners of Surgery and Medicine. Edited by ROSWELL PARK, A.M., M.D.; Professor of the Principles and Practice of Surgery and of Clinical Surgery in the Medical Department of the University of Buffalo, Buffalo, New York; Member of the Congress of German Surgeons; Fellow of the American Surgical Association; Ex-President Medical Society of the State of New York; Surgeon to the Buffalo General Hospital. Condensed Edition, with revisions. With 625 Engravings and 37 full-page Plates in colours and monochrome. London: Henry Kimpton. 1901. Pp. 1262.

THE volume before us is simply a condensed edition of the two-volume treatise edited by Mr. Roswell Park, and contributed to by no less than twenty-eight American surgeons. The book is excellently arranged into sections—a point of importance to students, for whose benefit this edition is, indeed, mainly intended. The earlier sections of the book are devoted to what may be termed the Principles of Surgery, and are for the most part excellent. There is, however, as is often the case where a number of men collaborate to produce a work, a want of uniformity in the excellence of the articles. The faults are almost entirely those of omission. Some sections are, in our opinion, excellent, but we regret to say others are miserably defective.

Fractures and dislocations receive but scant description, while the treatment of some of these injuries is anything but modern.

Abdominal surgery, in the progress of which the Americans have taken a very prominent position, is not dealt with in accordance with modern requirements. The whole surgery of the stomach, descriptive and operative, occupies scarcely ten pages, four of which are taken up almost entirely with illustrations of Witzel's method of performing

gastrostomy, Mikulicz's method of performing pyloroplasty, Billroth's method of performing pylorectomy, and a method of performing pylorectomy combined with anterior gastro-enterostomy. The whole surgery of the abdomen is compressed into some 56 pages.

The entire surgery of the thyroid gland occupies but three pages. These examples will suffice to show the sins of omission to which we have alluded. The great redeeming feature of the book is the profusion of illustrations, many of which are excellently executed, and will be of immense value to the student. The book is beautifully got up—the paper, type, and binding are excellent.

A Treatise on the Acute Infectious Exanthemata; including Variola, Rubeola, Scarlatina, Rubella, Varicella, and Vaccinia, with especial reference to Diagnosis and Treatment. By WM. THOMAS CORLETT, M.D., F.R.C.P. Lond.; Professor of Dermatology and Syphilography in Western Reserve University, &c., &c. Illustrated by 12 coloured Plates, 28 half-tone Plates from Life, and 2 Engravings. London: Henry Kimpton. 1902. 8vo. Pp. 392.

THE great feature of this latest addition to the bibliography of the Exanthemata is the wonderful way in which the appearances presented by these diseases are reproduced in the numerous half-tone plates illustrating the volume. For most of the plates we have nothing but praise. To our mind the coloured drawings are less successful. They are the work of Félix Méheux, *dessinateur et photographeur* of the Hôpital Saint Louis, Paris. The colouring seems to us to be too vivid, and the outlines of the figures are too sharp and distinct. Nevertheless the artist has achieved no small measure of success in his effort to reproduce in colour a series of twelve photographic negatives which seemed to require special demonstration.

Dr. Corlett's heart was evidently in his work. He felt the need for such a treatise when "young in the practice of medicine," and his keen recollection of the difficulties—

not to mention the discomfiture—which he encountered when brought face to face with the acute exanthemata, prompted him during subsequent years of clinical teaching to give special prominence to the differential diagnosis, and, "*when possible*," bedside instruction in this class of affections. We have italicised the words "when possible," which are quoted from Dr. Corlett's preface, because we cannot agree with him when he says in a following paragraph of the same preface that "the obstacles in the way of broad clinical study and bedside demonstration in such dangerous and highly communicable diseases as variola, scarlatina, and rubeola render it hazardous, and in many cases impracticable, to impart sufficient instruction to undergraduates."

We cannot admit that considerations of personal risk should weigh with medical students while engaged in the practical study of their profession. They are like soldiers who have enlisted in their country's army, and must share the dangers as well as the honours of the battle-field. Of course, all foolhardiness is to be deprecated, and every precaution to guard against infection should be taken. For example, re-vaccination should be insisted upon before a medical student is allowed to visit the wards of a small-pox hospital; and, in the case of typhus, all depressing influences are to be avoided, such as hunger, overfatigue, sleeplessness, before examining those sick of that most catching fever.

Dr. Corlett has written a learned and interesting book. It opens with a chapter on the early history of the exanthemata, culled from various sources, but especially from Dr. James Moore's "History of Smallpox," published in London in the year 1815. In subsequent chapters the various exanthemata are well described, the author not hesitating to draw freely upon recognised authorities—in fact, he has perhaps carried the process of compilation too far, for he is evidently an observant and painstaking physician, and his personal observations are of high value.

An "Addendum," running to twelve pages, contains a table showing the chief features in the differential diagnosis of the acute infectious exanthemata, together

with a formulary for disinfection, especially applicable to those diseases.

The "setting" of the work is all that can be desired, and the impression left on our mind after looking through the book is that Dr. Corlett has made a substantial and valuable contribution to the bibliography of Fever.

Studies from the Royal Victoria Hospital, Montreal. Vol. I., No. 2. (Neuropathology, 1.) On a case of Congenital Porencephalus in which the Porencephalic Area corresponded to the Area of Distribution of the left Middle Cerebral Artery. By DAVID A. SHIRRES, M.B., C.M. January, 1902. Pp. 62.

THIS interesting and ably reported case records the pathological appearances presented by the body of a woman who died of pneumonia at the age of seventy-six. She was born at full time, although her mother threatened abortion at the eighth month. Rigidity and paresis of the right upper extremity were noticed a week after birth. In childhood she was backward in learning to speak and to walk, but, although left-handed, she developed into a practically normal woman. She was twice married, but had no children. At about sixty, deterioration of mental faculties began to appear. She never had fits of any kind. She had kyphotic curvature of the dorsal vertebræ, with slight dragging of right foot, and spasticity of right arm and hand. The left middle cerebral artery was found to be obliterated by thrombosis from a point immediately after the giving off of the vessels to the basal ganglia. This lesion, which apparently occurred in the later months of fœtal life, caused atrophy and destruction of a large part of the cerebral cortex on the left side. The porencephalic cavity, thus caused, did not communicate with the lateral ventricle. There was general diffuse atrophy of the cerebral convolutions on the left side, lessening of pyramidal cells, and of projection fibres, while the association fibres were normal. Right hemisphere and corpus callosum normal. The caudate and lenticular nuclei on the left side were normal in size, but the optic thalamus and the

middle and posterior part of the internal capsule on the left side were atrophied. The left quadrigeminal bodies, particularly the inferior, were atrophied, as were the inferior brachium, the mesial geniculate body, and the left optic tract. In both optic nerves there was an increase of glial tissue, with atrophy of fibres in inferior part of left, and in central bundles of right nerve. The red nucleus on left side was much smaller than on right. The left superior cerebellar peduncle was smaller than the right above the decussation, while the right was smaller in the pontal region. The right dentate nucleus and the right cerebellar hemisphere were atrophied. Purkinje's cells, projection fibres, and molecular layer lessened; association fibres normal. Atrophy of lingula on right side. In the crus there was marked atrophy of the pyramidal fibres on the left side, also of the fronto-cerebro-cortico-pontal, and of the temporo-cortico-cerebro-pontal tracts. Locus niger normal on both sides. The left middle and inferior cerebellar peduncles were much larger than those of the right. Many pontal nuclei on left side were replaced by glial tissue. The posterior longitudinal fasciculus was smaller on left side; the left olive much contorted, but otherwise normal. Nuclei of all cranial nerves on floor of fourth ventricle were normal. External arcuate fibres on both sides well developed; hypertrophy of arcuate nucleus on left side. Atrophy of nucleus cuneatus, and still more of nucleus gracilis on right side. Lessening of internal arcuate fibres on right side, and of inter-olivary stratum on left side. Lateral internal arcuate fibres normal on both sides. Contraction with sclerosis of inner field of Flechsig on left side. Sclerosis and atrophy of left lateral fillet. Absence of nucleus of left lateral fillet. Sclerosis and atrophy of medial portion of left median fillet (motor) and general sclerosis of lateral part of left mesial fillet. Left pyramidal tract in medulla oblongata represented by only a few fibres. On right side of pons and medulla a sclerosed tract occupied the place of Gower's ascending fasciculus. In the cord the crossed pyramidal tract on the right side was absent, but considerable sclerosis was present. There was also some diffuse sclerosis in the crossed pyramidal tract

on the left side. The direct pyramidal tract on the left side was absent. Columns of Goll and Burdach were normal. Clarke's vesicular columns were normal. The anterior horn in the right side was altered in size and shape. The cell bodies were more numerous than on the left side, but were of lower type. One group of cells, the lateral and posterior external, were absent. There was an abnormal arrangement of the nuclei of the back muscles (commissural group). There were degenerated tracts in the antero-lateral region of the cord on both sides, most marked in upper cervical region.

In this case a larger number of superimposed neurons were affected than in other cases described. This may be due to the great age of the patient at the time of her death.

The above, in which we have reproduced the summary of the author with only slight alterations, shows the care and thoroughness with which this case has been investigated. It is of great importance in consequence of the good state in which the *post mortem* material was obtained, and in consequence of the complete clinical history which was furnished by the patient's friends.

The paper, which is well illustrated, is an exceedingly valuable contribution to neuropathology.

Human Physiology, prepared with Special Reference to Students of Medicine. By JOSEPH HOWARD RAYMOND, A.M., M.D. Second Edition, entirely re-written. Philadelphia and London: W. B. Saunders & Co. 1901. Pp. 668.

IN accordance with the practice of to-day that almost every teacher of physiology must produce a text-book, Professor Raymond presents us with this handsome volume, which, in its arrangement and scope, does not differ materially from so many others that we have had to notice within the last few years. While not unexceptionable either in the arrangement of the subjects or in the relative space given to them, it is on the whole a good compilation, and any student who has mastered its contents will have a sound knowledge of physiology, so far as

it can be learned from reading. There are many subjects which are much more fully treated of than usual in students' books, and some of these are interesting, not only in themselves, but as examples of the excellent physiological work now being done in America. Among these we would specially notice the investigation of Cannon on the movements of the stomach made by the Röntgen ray method, and the important work done by Professor Thomas R. French in the photography of the larynx.

The volume is excellently brought out, and profusely illustrated, not only with figures in the text, but with lithographic plates.

The Clinical Pathology of the Blood. By RUD. R. v. LIMBECK, K.K. Professor of Medicine in the University of Vienna; Physician to the Rudolfstiftung Hospital. Translated from the Second German Edition by ARTHUR LATHAM, M.A. (Oxon. et Cantab.), M.R.C.P., Lond.; Assistant Physician to St. George's Hospital, and the Brompton Hospital for Consumption and Diseases of the Chest; and JOHN NACHBAR, M.A., M.D., Cantab. London: The New Sydenham Society. 1901. 8vo. Pp. ix.+338.

THE too early death of Professor von Limbeck, of the University of Vienna, is much to be deplored, for no one has done more in recent years to advance our knowledge of the physiology, pathology, and chemistry of the blood. Before his death he had authorised the translation, which is now published under the auspices of the New Sydenham Society. In their preface the translators tell us that their English version represents the latest German edition in the main.

There are only five chapters in the book, but they are long ones. The first describes the methods of investigation in detail. It runs to 60 pages. The second is much shorter, occupying only 10 pages. It deals with the quantity of blood in a very interesting and novel fashion. Then follow chapters on the chemical and physical properties of the blood and its morphology. To each of these subjects nearly 100 pages are devoted. Chapter V. embraces clinical investi-

gations on the primary and secondary anæmias and the blood in other diseases.

In an appendix Professor v. Limbeck discusses the anæmias of childhood, particular attention being paid to Anæmia pseudo-leukæmica Infantum, so-called by von Jaksch in 1889, the claim of which to be considered a distinct and special form of disease is disputed by the author.

The other anæmias of childhood mentioned and briefly described are those met with in hereditary syphilis, rickets, gastro-intestinal inflammations, and tuberculosis.

This brief analysis of the contents of the book gives but a poor idea of the mine of wealth stored up in its pages. We congratulate the New Sydenham Society on having selected for publication in the English language one of the best modern works on Hæmatology.

Gibson and Russell's Physical Diagnosis. Third Edition, revised and re-written. By FRANCIS D. BOYD, C.M.G., M.D., F.R.C.P., Ed.; Assistant Physician, Edinburgh Royal Infirmary; Physician to the Deaconess Hospital; formerly Clinical Medical Tutor, Royal Infirmary, Edinburgh. Edinburgh and London: Young J. Pentland. 1902. 8vo. Pp. xx.+ 448.

THE second edition of this useful work was reviewed in the number of the Journal for May, 1893 (Vol. XCV., page 405). We formed a very favourable opinion of the book at the time, and a glance through the present edition corroborates that opinion. It is a first-rate guide to physical examination and diagnosis.

It will be noticed that the names of the original authors, Drs. G. A. Gibson and William Russell, now appear as part of the title of the book, while Dr. Boyd's name occupies the space allotted to that of the author in the middle of the title-page. This is but fair, for the task of revision has been most thoroughly carried out, and several new sections have been added, including important chapters on the examination of the blood, and on clinical bacteriology. These have been particularly well done, a marvellous amount of information being condensed into a comparatively few pages. Other

new sections are those on the examination of the gastric contents, intestinal parasites, and the cranial nerves. These additions are well illustrated in each instance.

The third edition is considerably larger than its predecessors, and forms a very complete and satisfactory guide to a precise and scientific diagnosis.

The Guide to South Africa. Edited annually by A. SAMLER BROWN and G. GORDON BROWN. 1901-1902 Edition. Ninth Edition. London: Sampson Low, Marston & Co. Cape Town, Port Elizabeth and Johannesburg: J. C. Juta & Co. 1901. 8vo. Pp. lx. +475.

WE have so often spoken favourably of this excellent Guide to South Africa that little more is expected of us than to notice the publication of this, the ninth annual, issue. The editors point out in a special prefatory note that, owing to the continuance of hostilities and the consequent unsettled state of the country, they have deemed it advisable to postpone any detailed description of the second Anglo-Boer war to a later edition of this work. They also remind their readers that great civil changes are taking place in South Africa, and that the present political situation makes it impossible to guarantee accuracy in relation to mining or game laws, State aid to immigration, methods of acquiring land, statistics of trade, and railway, coaching, and postal facilities.

Notwithstanding all this, however, the "Guide," as in past years, is replete with information of all kinds, and is indispensable to tourists, sportsmen, invalids, and settlers alike, these being the four sections of the community for whose use, in particular, the Guide has been compiled.

THE ROYAL ARMY MEDICAL CORPS AND SERVICE IN INDIA.

WE are informed by the Director-General of the Army Medical Service that the Secretary of State for India has decided to approve an increase to the pay of Officers of the Royal Army Medical Corps below the rank of Major while serving in India, and also of the issue of charge allowances for Senior Medical Officers of Station Hospitals there.

PART III.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—LOMBE ATTHILL, M.D., F.R.C.P.I.
General Secretary—JOHN B. STORY, M.B., F.R.C.S.I.

SECTION OF MEDICINE.

President—SIR CHRISTOPHER NIXON, M.D.; President, Royal College of Physicians of Ireland.
Sectional Secretary—R. TRAVERS SMITH, M.D., F.R.C.P.I.

Friday, May 16, 1902.

THE PRESIDENT in the Chair.

Living Exhibits.

DR. W. J. THOMPSON exhibited a case of ascending paralysis. The patient was a drayman for the last two years, and came into hospital on account of weakness of his legs; he had no loss of sensation, and the reaction to the faradic current was normal. Eleven days afterwards he was paralysed from his feet up to the superior border of the thorax. He could swallow fluids but not solids. He remained in this condition for weeks and then slowly recovered. At present he is able to attend to his duties, and his patellar reflex has returned.

Ascending Paralysis.

DR. PARSONS reported the case of a patient who was suffering from what is known as "Landry's disease," one of those in which the spinal cord shows no lesion. The malady, though called Landry's paralysis, was, he thought, really first recognised by a Dublin physician, Dr. Graves, who pointed out that in cases in which the spinal cord gave no evidences of any pathological lesion the mischief would probably be found in the peripheral nerve endings—a peripheral neuritis. The patient, who is the subject of the paper, entered the hospital complaining of numb-

ness of his arms and legs. He quickly became worse, and in a week's time lost all power of his legs and was unable to get out of bed. He had been in the habit of drinking from four to six pints of porter daily. His cranial nerves were intact, he had no drop-wrist, his temperature was subnormal, his muscle sense normal, but his hands were cold and clammy. The thoracic movements were normal, as were those of the diaphragm and abdominal muscles. He could not sit up in bed. He had no pain in his spinal column; his sensation was normal, as were his muscular reflexes; but his muscles were flabby, and he had lost the power of moving the legs. About one month after admission (October 14th), the right reflex was normal, and the following day the leg could be slightly flexed. On October 26th he complained of great pain and tenderness in the calf of the left leg. On December 8th he had so much improved that he could walk a little by himself, and last month he called to inquire if he might go on a roof to work. The treatment consisted in massage, the use of stimulating liniments, and the internal use of strychnin. Dr. Parsons quoted Gower's views as to the site of the lesion, and concluded that the paralysis was dependent on a toxic agent which had an affinity for the motor cells.

DR. O'CARROLL brought forward two cases of "Ascending Paralysis." [A full report of these cases will be found at page 1.]

DR. FINNY said he had a feeling of doubt as to the meaning of Landry's paralysis after hearing the papers. Some of the classifications were confusing. In Landry's disease the urinary organs are unaffected and the sensation is normal. Yet in two of the cases reported they heard that the patients had urinary troubles. The toxin seems capable of affecting the motor neurons and passing over the urinary centres in the cord. The absence of lesions may be accounted for by the insufficient means at the command of the pathologists in the past to detect them; and now when they are so much better prepared to detect lesions it is to be expected that they will be found. He had had two cases of the disease under his care—one, that of a girl, aged 18, who came to hospital after tramping about all night in rain. She complained of loss of motor power, paralysis supervened, quickly ascended to the respiratory centres, and she died of paralysis of respiration. He thinks there are many cases confounded with Landry's paralysis. He looked on Dr. Parson's case as a typical example of the disease, and he also thought one of Dr. O'Carroll's was to be so considered.

DR. DAWSON said he would like to know from Dr. O'Carroll if his first patient came from the Richmond Lunatic Asylum, for some of the earlier symptoms were not unlike the early symptoms of beri-beri as noticed in that institution. If the symptoms were due to a toxin, it is difficult to understand how they should follow such a systematic course. He inclined to the view that the disease was the outcome of overwork and malnutrition, conditions that were fulfilled in Dr. Finny's case.

DR. TRAVERS SMITH said that at the present time he had a case of Landry's paralysis under his care; the patient is a boy, aged 11. On May 10th the lad noticed that his knees were feeble, but if the knees were kept stiff he walked. On the 16th the paralysis was marked, and if he attempted to cough, the abdominal muscles failing to act, the effort ended in a simple blowing sound. His voice production and sensation are normal; his reflexes are lost, and the deep muscle sense was not well marked. On examining the erector spinæ muscles it was observed that their reflex was increased. The boy is very hysterical, crying all day. He suffers from incontinence of urine. He (Dr. Smith) looks upon the disease as being due to a toxin, with a strong affinity for the motor neurons, to an action to which the visceral centres are not susceptible.

DR. POTTER said he would like to know if Dr. O'Carroll's patient, who was an old soldier, had ever had malaria, or lived in a malarial country?

DR. CRAIG said the name "Landry's paralysis" made a clinical picture. Toxins are prone to attack neurons, and he would add that the further from the central nerve cell elements the axon is the more susceptible it is to the poison.

THE PRESIDENT said he quite agreed with Drs. Craig and Travers Smith that the name "Landry's paralysis" is simply a clinical term, as is locomotor ataxy. He, in Landry's paralysis, recognised three distinct lesions—(1) Acute multiple peripheral neuritis; (2) acute anterior corneal myelitis; (3) acute ascending paralysis, with anterior myelitis. Dr. Parsons had given the credit to Dr. Graves, of Dublin, for first pointing out that when the lesion is not found in the central nervous system it may be found in the peripheral extremities. This he (Sir Christopher Nixon) thought did not fairly explain Dr. Graves's views. Dr. Graves placed on record his case, that of a sailor named McNab, who was suffering from a tight and painful stricture, and it was noticed that as the stricture was dilated so did his lumbar para-

plegia disappear, and the ratio of improvement continued *pari passu*, so that when the stricture was fully dilated the lumbar paraplegia had disappeared, and the sailor was dismissed from hospital cured. M. Brown-Séquard, reasoning from the case, concluded that the peripheral irritation of the stricture had produced a reflex action in the nerve centre. Afterwards the same view was adopted by Hammond, the American neurologist, and others. Gull's views were much the same as those expressed by Dr. Craig, that the further the axon is removed from the trophic nerve centres, the more susceptible it is, such cases being in reality polyperipheral neuritis. That toxins do exhibit a preference for motor centres is seen daily in the action of curare, strychnin, quinine, ergot, tobacco, alcohol, and so forth. What the precise pathological lesion is, is unknown, and the cases have not helpe l to solve the difficulty.

DR. PARSONS said he was under the impression that it was during Graves's sojourn in Paris he made the observation that the lesion not having been found in the cord by the French pathologists, it may be situated in the peripheral extremities. Gower had expressed similar views to those put forward by the President. Dr. Finny's case was recorded by Ross and Bury. There is a difficulty in defining Landry's paralysis. Of his two cases he gives one only in detail. On admission his patient had no loss of control of the bladder. The toxic agent affected the motor centres and very slightly the sensory ones. The pain in the calf of one of his legs of which the patient complained when he commenced to get better, was due to thrombosis of some of the veins of the part, which were large and swollen.

DR. W. J. THOMPSON said that the points of interest in the case he exhibited were—(1) the age of the patient; (2) the fact that he had been exposed to cold; (3) the enlargement and subsequent diminution of the splenic area; (4) the complete control of the rectum and not of the bladder; (5) the slight exaggeration of the patellar reflex.

DR. O'CARROLL said that his patient had been in India. He did not come from the Richmond Lunatic Asylum. He called his cases Landry's paralysis on account of the convenience of a term which had become widened to include diseases of that type. Is the lesion intra-spinal? We cannot say. The name is a convenient clinical one, nothing more, and we all know that asking questions is much easier than answering them.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by Sir J. W. Moore, B.A., M.D., Univ. Dubl.;
F.R.C.P.I.; F.R. Met. Soc.;
Diplomate in State Medicine and ex-Sch. Trin. Coll. Dubl.;

Vital Statistics

For four weeks ending Saturday, May 17, 1902.

IRELAND.

Twenty-two Town Districts.

The average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ending May 17, 1902, in the Dublin registration area and the twenty-one principal provincial urban districts of Ireland was 22·2 per 1,000 of their aggregate population, which, for the purposes of these returns, is estimated at 1,092,322. The deaths registered in each of the four weeks ended Saturday, May 17, and during the whole of that period, in the several districts, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

Towns, &c.	Week ending				Average Rate for 4 weeks	Towns, &c.	Week ending				Average Rate for 4 weeks
	April 26	May 3	May 10	May 17			April 26	May 3	May 10	May 17	
22 Town Districts	24·5	20·5	22·9	22·2	22·5	Lisburn -	27·3	13·7	27·3	4·6	18·2
Armagh -	34·4	27·6	27·6	27·6	29·3	Londonderry	23·0	10·2	19·2	15·4	17·0
Ballymena	24·0	19·2	14·4	19·2	19·2	Lurgan -	35·4	17·7	22·1	26·6	25·4
Belfast -	22·2	17·3	21·7	20·6	20·5	Newry -	20·7	20·7	8·3	37·3	21·8
Clonmel -	46·0	25·5	15·3	61·3	37·0	Newtownards	11·4	11·4	22·9	22·9	17·2
Cork -	17·8	21·8	25·4	23·3	22·0	Portadown	31·1	0·0	26·0	15·6	18·2
Drogheda -	28·6	16·3	44·9	0·0	22·5	Queenstown	19·8	0·0	46·3	33·1	24·8
Dublin (Reg. Area) -	26·8	24·9	23·4	24·8	25·0	Sligo -	19·2	19·2	19·2	24·0	20·4
Dundalk -	35·9	23·9	23·9	8·0	22·9	Tralee -	58·5	26·6	58·5	15·9	39·9
Galway -	42·8	3·9	31·1	50·5	32·1	Waterford	25·3	19·5	11·7	17·5	18·5
Kilkenny -	19·9	39·8	24·8	39·8	31·1	Wexford -	4·7	32·7	23·4	14·0	18·7
Limerick -	16·4	26·0	17·8	8·2	17·1						

The deaths (excluding those of persons admitted into public institutions from without the respective districts) from the principal zymotic diseases, registered in the 22 districts during the week ended Saturday, May 17, were equal to an annual rate of 1·4 per 1,000, the rates varying from 0·0 in fifteen of the districts to 6·9 in Armagh. Among the 142 deaths from all causes registered in Belfast are 4 from measles, 3 from whooping-cough, one from diphtheria, one from enteric fever, and 2 from diarrhœa.

DUBLIN REGISTRATION AREA.

The Dublin Registration Area now consists of the City of Dublin as extended by the Dublin Corporation Act, 1900, together with the Urban Districts of Rathmines, Pembroke, Blackrock, and Kingstown. The population of the Area, estimated to the middle of 1902, is 379,003, being made up of the following:—City, 293,394; Rathmines, 33,203; Pembroke, 26,025; Blackrock, 8,759; and Kingstown, 17,622.

In the Dublin Registration Area the births registered during the week ended Saturday, May 17, amounted to 202—104 boys and 98 girls; and the deaths to 186—89 males and 97 females.

DEATHS.

The registered deaths represent an annual rate of mortality of 25·6 in every 1,000 of the population. Omitting the deaths (numbering 6) of persons admitted into public institutions from localities outside the Area, the rate was 24·8 per 1,000. During the twenty weeks ending with Saturday, May 17, the death-rate averaged 26·5, and was 3·8 below the mean rate for the corresponding portions of the ten years, 1892–1901.

The 186 deaths registered in the week ended Saturday, May 17, include 3 each from measles, influenza, whooping-cough, and diphtheria, 2 from enteric fever, and 1 each from scarlet fever, diarrhœa, and anthrax (splenic fever).

Three deaths were due to tuberculous phthisis and 27 were registered as being due to *phthisis*; tuberculous meningitis caused 3 deaths, tuberculous peritonitis and *tabes mesenterica* each caused one death, and 9 deaths were caused by other forms of tuberculous disease.

Four deaths were registered under the heading of malignant disease—*cancer*.

Diseases of the nervous system caused 16 deaths, which include 5 from *convulsions* (of the latter one was under one month old,

2 were over one month but under one year old, and 2 were between the age periods of one year and 5 years).

Diseases of the heart and blood vessels caused 26 deaths, including 4 from *apoplexy—hemiplegia.*

Diseases of the respiratory system caused 30 deaths. Of this number 16 were due to bronchitis, one to croupous pneumonia, 6 to broncho-pneumonia, and 5 to *pneumonia.* The total equals an annual rate of 4·1 per 1,000 of the estimated population of the area, the rate for the corresponding period of the past 10 years being 4·3 per 1,000.

Two accidental deaths were registered, and also one case of suicide.

In 8 instances the cause of death was "uncertified," there having been no medical attendant during the last illness. These cases comprise the deaths of 4 children under one year of age and the deaths of 2 persons aged 60 years and upwards.

Forty-nine of the persons whose deaths were registered in the week under discussion were under 5 years of age (19 being infants under one year, of whom 8 were under one month old), and 41 were aged 60 years and upwards, including 17 persons aged 70 and upwards, of whom 7 were octogenarians, and 2 (females) were stated to have been aged 91 and 99 years respectively.

The Registrar-General points out that the names of causes of death, printed above in italics, should be avoided whenever possible in Medical Certificates of the Cause of Death.

STATE OF INFECTIOUS DISEASE IN DUBLIN.

(1.) Cases of Infectious Diseases Notified to the Public Health Committee of the Corporation.

Sir Charles A. Cameron, C.B., Medical Superintendent Officer of Health for the City of Dublin, has furnished information regarding the number of cases of infectious diseases in the City of Dublin notified under "The Infectious Diseases (Notification) Act, 1889," as follows :—

Week ending	April	26,	1902, ..	.. 103 cases.
,,	May	3,	,, ..	.. 108 cases.
,,	,,	10,	,, ..	.. 80 cases.
,,	,,	17,	,, ..	.. 107 cases.

Of the 107 cases notified in the week ended May 17, 28 were erysipelas, 9 enteric fever, 11 scarlatina, 6 diphtheria. 38 measles 1 rubella, 4 continued fever, and 9 chicken-pox.

(2.) CASES OF INFECTIOUS DISEASES IN RATHMINES URBAN DISTRICT.

Mr. Fawcett. Executive Sanitary Officer for Rathmines Urban Council, has furnished information regarding the number of cases of infectious diseases in the Urban District of Rathmines notified under "The Infectious Diseases (Notification) Act, 1889," as follows :—

Week ending	April	26, 1902	.. ..	2 cases.
,,	May	3, ,,	.. ..	5 cases.
,,	,,	10, ,,	.. ..	10 cases.
,,	,,	17, ,,	.. ..	4 cases.

All 4 cases notified in the last week were scarlatina.

(3.) CASES OF INFECTIOUS DISEASE IN PEMBROKE URBAN DISTRICT.

Mr. Manly, Executive Sanitary Officer for Pembroke Urban Council, has furnished information regarding the number of cases of infectious diseases in the Urban District of Pembroke notified under "The Infectious Diseases (Notification) Act, 1889," as follows :—

Week ending	April	26, 1902	.. ..	7 cases.
,,	May	3, ,,	.. ..	15 cases.
,,	,,	10, ,,	.. ..	3 cases.
,,	,,	17, ,,	.. ..	4 cases.

Of the 4 cases notified in the last week, 2 were measles, 1 whooping-cough, and 1 was diphtheria.

(4.) CASES OF INFECTIOUS DISEASES UNDER TREATMENT IN DUBLIN HOSPITALS.

One case of small-pox remained under treatment at the close of the week ended May 17.

Twenty-seven cases of measles were admitted to hospital in the same week, 11 were discharged, there were 2 deaths, and 51 cases remained under treatment at the close of the week.

Eight cases of enteric fever were admitted to hospital, 9 cases were discharged, there was one death, and 29 cases remained under treatment at the close of the week.

Thirteen cases of scarlatina were admitted to hospital, 11 cases were discharged, there was one death, and 84 cases remained under treatment at the close of the week.

Five cases of diphtheria were admitted to hospital, 5 cases were discharged, there were 3 deaths, and 35 cases remained under treatment at the close of the week.

In addition to the above-named diseases, 4 cases of pneumonia were admitted to hospital, 6 patients were discharged, and 28 cases remained under treatment at the end of the week.

STATE OF INFECTIOUS DISEASE IN THE CITY OF BELFAST.

Dr. Whitaker, Medical Superintendent Officer of Health, has furnished information regarding the number of cases of infectious diseases in the City of Belfast notified under "The Infectious Diseases (Notification) Act, 1889," as follows:—

Week ending	April	26, 1902	.. ..	43 cases.
,,	May	3, ,,	.. ..	65 cases.
,,	,,	10, ,,	.. ..	51 cases.
,,	,,	17, ,,	.. ..	63 cases.

Of the 63 cases notified in the week ended May 17, 22 were enteric fever, 11 erysipelas, 9 diphtheria, 15 continued fever, and 5 scarlet fever.

ENGLAND AND SCOTLAND.

The mortality for the week ended Saturday, May 17, in 76 large English towns, including London (in which the rate was 16·2), was equal to an average annual death-rate of 17·3 per 1,000 persons living. The average rate for eight principal towns of Scotland was 19·4 per 1,000, the rate for Glasgow being 21·6 and for Edinburgh 15·3.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ N., Long. 6° 15′ W., for the Month of May, 1902.

Mean Height of Barometer, - - -	30·023 inches.
Maximal Height of Barometer (25th, at 9 a.m.),	30·503 ,,
Minimal Height of Barometer (17th, at 2 p.m.),	29·224 ,,
Mean Dry-bulb Temperature, - - -	48·8°.
Mean Wet-bulb Temperature, - - -	45·3°.
Mean Dew-point Temperature, - -	41·4°.
Mean Elastic Force (Tension) of Aqueous Vapour,	·265 inch.
Mean Humidity, - - - -	76·6 per cent.
Highest Temperature in Shade (on 24th), -	67·9°.
Lowest Temperature in Shade (on 7th), -	36·0°.
Lowest Temperature on Grass (Radiation) (7th),	32·8°.
Mean Amount of Cloud, - - -	66·8 per cent.
Rainfall (on 22 days), - - - -	2·798 inches.
Greatest Daily Rainfall (on 30th), - -	·619 inch.
General Directions of Wind, - - -	N., W.N.W.

Remarks.

May, 1902, was the converse of its namesake in 1901, which had been bright, dry and seasonably warm, for it proved dull, showery and unseasonably cold. The amount of cloud was 66·8 per cent., or more than double the figure for May, 1901—namely, 33·1 per cent. The estimated duration of bright sunshine also was only 178¾ hours, or a daily mean of 5¾ hours compared with 302¼ hours, or a daily mean of 9¾ hours, in May, 1901. Northerly and north-westerly winds showed a remarkable predominance. So cold a May had not been experienced in Dublin since 1869.

In Dublin the arithmetical mean temperature (49·9°) was much below the average (52·0°). The mean dry-bulb readings at 9 a.m. and 9 p.m. were 48·8°. In the thirty-seven years ending with 1901, May was coldest in 1869 (M. T. = 48·2°), and warmest in 1893 (M. T. = 56·7°). In 1901 the M. T. was 53·6°.

The mean height of the barometer was 30·023 inches, or 0·034 inch above the corrected average value for May—namely, 29·989 inches. The mercury rose to 30·503 inches at 9 a.m. of the 25th, and fell to 29·224 inches at 2 p.m. of the 17th. The observed range of atmospheric pressure was, therefore, 1·279 inches.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 48·8°, or 2·9° above the value for April, 1901—45·9°. Using the formula, *Mean Temp.* = *Min.* + (*Max.* — *Min.* × ·47), the value is 49·5°, or 2·1° below the average mean temperature for May, calculated in the same way, in the twenty-five years, 1865–89, inclusive (51·6°). The arithmetical mean of the maximal and minimal readings was 49·9°, compared with a twenty-five years' average of 52·0°. On the 24th the thermometer in the screen rose to 67·9°—wind, W.; on the 7th the temperature fell to 36·0°—wind, N. The minimum on the grass was 32·8°, also on the 7th.

The rainfall amounted to 2·798 inches, distributed over 22 days. The average rainfall for May in the twenty-five years, 1865–1889, inclusive, was 2·030 inches, and the average number of rainy days was 15·4. The rainfall and especially the rainy days were thus much above the average. In 1886 the rainfall in May was very large—5·472 inches on 21 days; in 1869, also, 5·414 inches fell on 19 days. On the other hand, in 1895, only ·177 inch was measured on but 3 days. In 1896 the fall was only ·190 on 7 days. In 1901, 1·204 inches fell on 9 days.

Solar halos appeared on the 10th, 16th, 25th and 29th. High winds were noted on 7 days, but attained the force of a gale on only one occasion—the 16th. Hail fell on the 2nd, 3rd, 7th, 17th, 18th and 19th. Thunder and lightning occurred on the 17th.

During the month the thermometer did not fall below 32° in the screen or on the grass. The mean minimal temperature on the grass was 40·3°, compared with 41·7° in 1901, 41·6° in 1900, 40·6° in 1899, 42·9° in 1898, 40·9° in 1897. 43·1° in 1896, 41·8° in 1895, 37·6° in 1894, and 45·6° in 1893. The maximum reached or exceeded 60° on only 5 days, but never fell short of 50°.

The rainfall in Dublin during the five months ended May 31st amounted to 9·973 inches on 81 days, compared with 7·724 inches on 67 days in 1901, 9·921 inches on 92 days in 1900, 9·652 inches on 87 days in 1899, 10·568 inches on 84 days in 1898, 10·693 inches on 93 days in 1897, 5·971 inches on 70 days in 1896, 10·410 inches on 68 days in 1895, 12·709 inches on 90 days in 1894, 7·908 inches on 66 days in 1893, and a twenty-five years' average of 10·496 inches on 81·6 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall was 2·535 inches distributed over 20 days—·540 inch falling on the 30th, and ·500 inch on the 29th. The total fall since January 1st, 1902, equals 11·750 inches on 68 days, compared with 11·205 inches on 65 days in 1901, and 16·381 inches on 84 days in 1900, 15·475 inches on 86 days in 1899, 12·445 inches on 78 days in 1898, 14·120 inches on 90 days in 1897, 5·716 inches on 52 days in 1896, 12·845 inches on 58 days in 1895, 15·696 inches on 85 days in 1894, and 9·565 inches on 65 days in 1893.

Dr. Arthur S. Goff returns the rainfall at Lynton, Dundrum, Co. Dublin, as 3·26 inches on 22 days, compared with 1·09 inches on 10 days in May, 1901, the greatest daily measurement being ·78 inch on the 30th. Thunder and lightning occurred on the 17th; thunder was heard on the 28th. The temperature in the shade ranged from 67° on the 24th to 37° on the 7th. The mean temperature of the month was 50·5° compared with 52·6° in May, 1901. Hail fell on the 17th, 18th and 28th; sleet on the 17th.

The rainfall at Cloneevin, Killiney, was 2·58 inches on 21 days, compared with 1·20 inches on 10 days in May, 1901, ·57 inch being measured on the 30th. The average rainfall in May at this station during the 17 years, 1885–1901, inclusive, was 2·032

inches on 13·2 days. Since January 1st, 1902, 10·66 inches of rain have fallen at Cloneevin on 80 days. This compares with a 15 years' average of 9·782 inches on 71·7 days.

Dr. J. Byrne Power, F.R. Met. Soc., Medical Superintendent Officer of Health, Kingstown, Co. Dublin, reports that the mean temperature for the month of May at that health resort was 50·3°, the extremes being—highest, 68°; lowest, 36°. At Bournemouth the mean was 50·7°, the extremes being—highest, 73°; lowest, 35°. The mean temperature at Kingstown during each and every one of the past winter months of November, December, January, February, and March, has been higher at Kingstown than at Bournemouth, the average for these 5 months being 43·6° at Kingstown, and 41·7° at Bournemouth. This relative condition of temperature is now becoming reversed as the summer solstice approaches, and from that period the summer heat becomes intense, and at times very oppressive on the south coast of England, while at Kingstown it will be comparatively cool. The mean daily range at Kingstown was 12·4°, and at Bournemouth 16·1°. The mean temperature of the sea at Sandycove bathing-place was 51°. The rainfall at Kingstown was 2·22 inches on 19 days, and at Bournemouth 2·47 inches on 20 days. Thunder and lightning occurred on the 17th. The duration of bright sunshine at Kingstown was 179·9 hours, whereas it was 188·9 hours at the Ordnance Survey Office, Phœnix Park, 200·2 hours at Valentia, 173·2 hours at Parsonstown, 228·2 hours at Southport, and 143·9 hours at Eastbourne. The Mourne Mountains were visible at Kingstown on the 6th, 20th, and 29th.

QUEEN'S NURSES IN IRELAND.

IT is not only in the remote island of Achill that the services of a Queen's nurse are appreciated. From Portadown, in Co. Armagh, comes a striking evidence of the manner in which the work carried on in that town is regarded "The time," says the report, which was read at the annual meeting of the Nursing Society, "is fortunately passed when it might have been necessary for the report to take up the burden of convincing the people of Portadown of the usefulness of the work done by the society, and the justice of the claim for the support of the public." The number of visits paid by the nurse last year was 5,067, an increase of 36 on the previous year.—*The Hospital*, June 21.

PERISCOPE.

CHANCRE OF THE TONSIL.

THE "Transactions" of the American Laryngological Association for 1901 contain an article on the above subject by John Edwin Rhodes, M.D., who has collected thirty-five cases, hitherto unreported, and has, as far as possible, given the mode of infection. Several points are insisted upon strongly. He writes:—"In the collection of information upon this special lesion of syphilis I have been strongly impressed with the fact that the disease should not always have attached to it the stigma that is still associated with it, of being a venereal disease only, when, in fact, it should often be classed among contagious diseases. It is frequently acquired in an entirely innocent manner, though often from those who are not themselves innocent victims of an infection." Again, "The infection is possible both by immediate contact and by transmission, the virus being conveyed to the mouth by any one of a thousand different media." In dealing with the appearances the writer lays down that no form can be considered as typical, owing to the fact that the tonsils vary so much in size and density, so that it is impossible for the outward form to be at all constant. Taking the modes of infection as given, we may divide them into those contracted by—Bestial practices, 4; kissing, 12; using infected glasses, pipes, &c., 5; dirty instruments, 2: total, 23; and from causes unknown, 12: 35 cases in all.

NOTE ON THE USE OF THE ELECTRO-MAGNET FOR THE EXTRACTION OF PARAMAGNETIC FOREIGN BODIES FROM THE AIR PASSAGES.

IN the same "Transactions" Dr. A. W. de Roaldis gives the results of his attempts to remove foreign bodies by means of magnetic attraction from the upper air passages. His experiments were made on the cadaver, and various common objects were used, such as nails, iron buttons, and steel pins. Class A.—Objects placed in the nose, most of which were easily brought out, though the author says that sharp objects may become imbedded, and so be unable to obey the magnetic force. Class B.—Objects in the larynx were not removed with the magnet placed 1½ inches from the teeth; but this is probably due to the fact that the magnet was not suitable, as Haab's magnet is more suited for eye and nose than for throat. Class C.—Foreign bodies placed in the trachea and bronchi. For these a low tracheotomy, with an incision one inch long, was performed. These were all easily removed till a distance of 5½ inches was reached—that is, two

inches beyond the bifurcation. Class D.—Experiments with the electric magnet applied externally. Buttons were in this manner—namely, by sliding the magnet along the surface—easily extracted through the tracheal wound from the bronchi, and also downwards from the subglottic space, but failure occurred when it was attempted to bring them through the larynx into the mouth. To overcome this difficulty the author suggests that the object should be brought up to the glottis by the magnet applied externally and held there until another magnet suitably formed could be introduced into the mouth, and so attract the body straight upwards.

CLEFT PALATE AND ITS RELATION TO SPEECH.

DR. HUDSON-MAKNEN, in the "Transactions" of the American Laryngological Association for 1901, has an interesting paper on the above subject. He states that the vowel sounds may be articulated when the palate is defective, but that their resonance is much impaired; while for the proper pronunciation of the consonants the perfect palate is essential. "It is necessary," he says, "in order to pronounce consonants to impede the moving column of air at different points, and these points are called stop positions. They have been divided into anterior, middle, and posterior stop positions. For all these, in order to have a block to the column of air, a perfect palate is necessary. The function of the palate is, therefore, twofold—one to help to form the stop positions, and two to form an obturator, and so force the air to pass through the particular stop position required. The various defects of the palate are—(1) perforations, (2) cleft palate, (3) paralysis of the muscles. In dealing with the subject of operative interference with cleft palate, he says, "that once the faulty habit of speech is acquired, any alteration for the better is difficult to bring about; therefore, operate early;" and also that even when the defect is closed, it is often impossible to produce such a palate that will be able to perform the functions of a normal one, as much of the muscular tissue is wanting, and there is often insufficient material to form an obturator. He recommends a few minor surgical proceedings as of great benefit, subsequent to a successful operation for closure of a cleft:—(1) To separate any adhesions between the pillars of the fauces and the tonsils; (2) to divide some fibres of the palato-glossi, and pharyngei muscles, and to stretch the velum; (3) to train and develop the muscles by voluntary exercises.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. V.—*A Peculiar Abdominal Tumour.* By JOHN STEPHEN M'ARDLE, F.R.C.S.I.; Surgeon and Lecturer on Surgery to St. Vincent's Hospital; Assistant Professor of Operative Surgery, C. U. I.; Consulting Surgeon, Children's Hospital, Temple-street; Consulting Surgeon, National Hospital, Holles-street; Member of Council, Royal College of Surgeons, Ireland. (Illustrated.)

MISS A. B., aged twenty-three years, was sent to Holles-street Hospital on June 20, 1902, suffering from an abdominal tumour of recent appearance. On examination, Dr. Horne, under whose care the patient was, found that the tumour was not of pelvic origin, and on questioning the patient elicited the fact that for over a year she had been in the habit of eating hay. She complained of morning sickness, vomiting after solid food, particularly meat, and occasional headaches; but, beyond this, little or no inconvenience. Dr. Horne mapped out the tumour, which extended about 1½ inches below the umbilicus, its lower border being convex, its upper border notched. Both borders could be defined. It was exceedingly hard, and, when fixed, was dull on percussion. It was readily movable upwards, so that only its lower border could be detected below the costal arch; and when displaced upwards even getting into the erect posture did not cause a reappearance. Dr. Horne diagnosticated a tumour in the stomach,

probably consisting of hay, and kindly asked me to operate. The procedure I carried out, on the 7th of July, assisted by Dr. Horne and Mr. Reginald White, was as follows:—I made an incision in the central line about five inches in length, its centre corresponding to the umbilicus. Immediately on opening the abdomen the stomach presented, covered by greatly distended veins, the coronary arteries being tortuous and pulsating vigorously. A tumour could be felt, ovoid in outline, occupying the pyloric third of the stomach, and another similar in shape, but much larger, extended towards the cardiac end. The notch above referred to corresponded to the division between these two masses. Realising that

A B

extraction could be most readily carried out by opening the stomach where the two masses met, I made an incision midway between the lesser and greater curvatures, at the junction of the middle and pyloric thirds of the stomach. This incision was about three inches in length through a greatly thickened muscular and submucous coat—the mucous membrane being, strange to say, the least altered of the gastric coats. I secured the chief gastric vessels before cutting through the mucous membrane, and, having packed the wound with gauze sponges, the stomach being well

held out, I cut through the mucous membrane and gave exit to a considerable quantity of fluid, like thin starch. It was sour-smelling, but not offensive. Grasping the conical end of the pyloric tumour (A, Fig.) I easily removed it by traction and pressure from behind. A similar procedure resulted in the removal of the larger mass which occupied the cardiac end (B, Fig.). Before and during the extraction of these masses irrigation was kept up with sterilised water, with the result that there was no soiling of the peritoneum. After securing the blood-vessels I passed a submucous purse-string suture, which served to invert the mucous membrane; then three mattress sutures in the muscular layer, and over these numerous Lembert sutures were applied to close the serous coat. The stomach was now dropped, after cleaning, into the abdominal cavity, which was closed in the ordinary way. After operation there was vomiting of some mucus; later slight hiccough occurred. During all this time there was violent abdominal pain, but no collapse. During the night it was necessary to give her morphia to prevent restlessness. Nothing was administered by the mouth, but as thirst was very distressing a saline enema was given, after which the tongue became moist. The pain gradually subsided, but on the night of the 8th again occurred, referred to the neighbourhood of the wound, and morphia was again necessary. This secured a good night's rest, and on the evening of the 9th her temperature was 99° and her pulse 72.

The masses of hay which constituted the tumour are well shown in the accompanying photograph; and it can be easily seen how an hour-glass shape was produced in the stomach. The conical ends of each of the masses were covered with mucus and food débris, while the opposite ends, as is well seen, were ragged and macerated. The tail of the smaller tumour extended into the duodenum, and was stained with bile, showing that it must have been hanging in this position for a considerable time. The larger tumour was over 1½ lbs. in weight, and the pyloric one was nearly ½ lb.—the two weighing exactly 2 lbs. immediately on extraction. They measured 16½ inches in length, and 3½ inches in breadth. The circumference at largest point was 10 inches.

The reason of the retention of this great mass of hay in the stomach is very easily seen on examining the specimen. The fibres, which were very strong, were not masticated, and, owing to their rigidity, the pylorus resisted their passage. Owing to the movements of the stomach they were woven together, so as to produce the masses well shown in the photograph.

ART. VI.—*Pan-Hysterectomy for Uterine Myoma.* By R. J. KINKEAD, M.D., Dub., L.R.C.S.I.; Professor of Obstetrics, Queen's College, Galway; Physician and Gynæcologist to the Galway Hospital.

A LADY, aged forty-one, unmarried, was placed under my care in the Galway Hospital by my colleague, Professor Lynham. She had been under his care for dysmenorrhœa and menorrhagia.

On palpation a tumour was felt in right iliac region: smooth, hard, about the size of the fœtal head, its upper end, an inch below the level of the umbilicus, its lower could not be felt: it could be grasped easily, was freely movable, and could be pushed a little beyond the middle line.

On vaginal examination, the uterus was found, enlarged and depressed in the pelvis, the cervix taken up into the myomatous growth, and the os represented by a crescentic slit: the pelvic mass was fairly firmly fixed, it was very little affected by movement of the abdominal tumour: when the abdominal tumour was rolled freely about, the pelvic portion, stirred only slightly, even when the pressure was directed downwards.

Diagnosis—Myomatous uterus with sub-peritoneal pedunculated tumour.

As the patient suffered great pain, lost much blood, at each period, and was becoming anæmic, she was anxious to have the tumour removed.

She came into hospital for operation on July 13, 1901. The urine was examined and found to be free from albumen—and sugar: on the 14th she got a bath and aperient and the abdomen was scrubbed with turpentine: on the 15th the pubes were shaved, vulva well washed, vagina irrigated, a 1 in 40 carbolic compress placed on abdomen; a dose of calomel was administered at bed time and an enema was given early next morning.

Assisted by Professors Lynham and Brereton I operated at 10 30 a.m. on the 16th. Ether was administered by Dr. Waters, House Surgeon. Dr. Robert Allen, F.R.C.S.I., of Belfast, was also present.

The abdominal wall was very thick, coated with fat, which added to the difficulty of the operation and made it necessary to prolong the incision to an inch above the umbilicus.

On opening the peritoneum the tumour was seen lying obliquely to the right side, there was some difficulty in dislodging it from

the pelvis, when I found there was only one elongated tumour with rounded ends, involving the entire uterus from os to fundus—it was free from adhesions.

The ovarian vessels and round ligaments were first tied, clamped and cut on both sides, I then made an incision from the insertion of one round ligament to that of the other, and dissected off, and pushed down, the peritoneum, completely separating the bladder from the uterus and upper part of the vagina, I then isolated, picked up, tied and cut the uterine arteries.

The myomatous growth had invaded the cervix and its bulk was such as to have entirely obliterated the vaginal fornices, I had therefore to open the vagina two inches below its cervical attachment.

The vaginal walls were thick, dense, and yellow, like yellow elastic tissue, and had to be cut through all round with scissors; there was no bleeding from the cut edges.

The pelvis and abdomen were irrigated with hot normal saline—the cut margins of the broad ligaments were sewn together by a continuous suture of fine catgut, the vagina was loosely plugged with gauze, and the peritoneal flap, dissected off the uterus, dropped over it, but not sutured, so as to allow of drainage.

The omentum having been drawn down over the intestines, the peritoneum was closed by continuous catgut, and the rest of the abdominal wall, by silkworm-gut interrupted sutures.

The operation occupied an hour, the shock was severe.

During the operation, a hypodermic of $\frac{1}{60}$ gr. strychnin was administered: while the abdominal wound was being closed an enema of hot normal saline, beef tea and brandy, was thrown up the rectum, and another $\frac{1}{60}$ gr. strychnin injected: a third was given, and another enema, after patient was placed in bed—hot bottles were disposed about body and limbs; and the foot of the bed elevated on blocks nine inches high.

At 5 p.m. as she was in considerable pain $\frac{1}{100}$ gr. strychnin and $\frac{1}{4}$ gr. morphia was injected, at 10 p.m. she was comfortable and 8 oz. urine had been drawn off. On the 18th she was able to dispense with the catheter, passed flatus at intervals during day, got 1 oz. white mixture every 2 hours and her bowels were comfortably moved during the night. On 19th vaginal plug was removed, and there was nice drainage.

I had to leave, to attend the Tuberculosis Congress in London, and did not see her again until the 28th. I find from the notes

of Professor Lynham who kindly took my duty, that she suffered from a sharp attack of diarrhœa, from the 22nd to the 27th: that the wound was dressed and one suture removed on the 25th and again on the 27th when 4 sutures were taken away.

She sat up on 6th and 7th August, but had to keep her bed on the 8th, a stitch abscess having formed. Prior to and after the operation the urine was free from albumen. On the 8th a slight amount was detected which increased in quantity, but not to any considerable amount till the 16th when the urine became bloody.

The hæmaturia continued unaffected by treatment till the 23rd when I washed out the bladder with a solution of sodium benzoate, the bleeding at once diminished, and the washing out being continued ceased on the 25th. There was only a trace of albumen on the 26th and none on the 27th, from which date convalescence was uneventful.

The cause of the bleeding is obscure—before it began the vaginal wound had healed and all discharge therefrom had ceased, yet to make assurance doubly sure I drew off for examination the bloody urine with a catheter.

The bladder was not injured during the operation, there was no vesical trouble, no irritability of bladder or difficulty in retaining or passing water, no mucus or pain—but after a few days there was a heavy smell.

There was no evidence of kidney mischief—the urine had been examined regularly and was found normal until the 8th of August, twenty-three days after the operation, and with the cessation of the bleeding, the albumen rapidly disappeared—microscopic examination showed only blood cells and a few epithelial scales, neither tube casts, renal corpuscles nor pus cells.

Professor Lynham suggests it was vicarious menstruation, in favour of which might be urged the time of occurrence, being about the date of her menstrual period, the absence of other appreciable cause, the odour, and the failure of drugs to check it.

I have to confess to an error in diagnosis: prior to opening the abdomen, I was satisfied I had to deal not merely with a myomatous uterus requiring removal, but with a pedunculated fibroid as well: in extenuation I may plead, the unusual thickness of the abdominal wall and the great mobility of the abdominal, together with the very slight mobility of the pelvic, portion of the tumour.

The upper end moved as freely as if it was attached to the uterus by a pedicle and there was not more motion in the vaginal part than if such had been the case. The shape of the mass explains this—elongated cylindrical with rounded ends: the lower end with the limited motion of a ball and socket joint—while the thick abdominal wall prevented the body of the tumour being felt and gave an exaggerated size to its upper end.

The following short pathological report was kindly furnished by Dr. W. Sandys, Lecturer on Pathology for Session 1901 and 1902 in the Queen's College, Galway :—

"The tumour consists of two roughly spherical portions, one involving the fundus, the other, the larger, involving the cervix, and descending along the vaginal wall for about two inches. This latter portion seems to have taken its origin from the muscular fibres of the vaginal wall and to a small extent from the cervix. The length of the whole mass is 9¼ inches and weighs 2 lbs. 9½ ozs.; the width is, through the vaginal portion, 6¼ inches; that through the fundal portion being 4½ inches. Microscopical examination shows the structure of both portions to be fibro-myoma."

I have been informed within the last few days that the lady enjoys excellent health and is able to discharge her domestic duties.

ART. VII.—*Colles's Fracture.*[a] By JOHN KNOTT, M.A., M.D., Ch.B., and Dip. Stat. Med. (Univ. Dub.); M.R.C.P.I.; M.R.I.A.; &c., &c.

(*Continued from page 26.*)

GOYRAND had arrived at, or confirmed, many of his own special views on the fracture by experiments on the cadaver. M. Bouchut, in a thesis on the same subject—published in 1834—gave the result of a larger series of experiments in the same line of research. The example would appear to have become infectious, for a host of other investigators followed the same path; each of whom threw, or believed that he threw, some additional rays of light on

[a] Read before the Pathological Section in the Royal Academy of Medicine in Ireland, on Friday, March 21st, 1902.

the debated or previously misunderstood problems which still obscured the mechanism and pathology of the fractures of the carpal extremity of the radius.

In a communication made by Diday a few years later to the pages of the *Archives Générales de Médecine*, the mechanism of the causation of this fracture was discussed with laborious care and precision. He tried to define and sketch the application of the force and its results with mathematical accuracy; and explained the obliquity of the plane of fracture by the decomposition into two forces of the momentum of the body in falling on the radius, when inclined to the surface of the ground at an acute angle. According to the well-known law of parallel forces, one of these is in a direction parallel to the surface of the ground, and, necessarily, becomes completely neutralised; the other is perpendicular to the same plane; and, accordingly, is the only one which is able to act. As the line of the direction of the vertical force intersects the shaft of the radius in the oblique position into which this bone is thrown at the moment of the fall, "it is clear that the solution of continuity ought, as in all fractures by *contre-coup*, to follow the same direction as that of the force which produces it; and will, in this case, follow an oblique line running downwards and forwards—in relation to the radius, considered in the position which it occupies in the subject when in the vertical posture." A corresponding explanation applies to the reverse obliquity of the plane of fracture in the rarer cases where it is produced by a fall on the back of the hand. He also lays much stress upon the phenomenon of the *shortening* of the broken radius, which he attributes to the over-riding of the fragments; and which, in his experience, was invariably present—amounting, in some cases, to five or six lines. He also describes the backward displacement of the carpus, and the forward projection of the carpal extremity of the ulna. The shortening of the radius has the effect of throwing the surfaces of the inferior radio-ulnar articulation out of their normal mutual contact; hence the impediment to the movements of pronation and supination which so often continues for a considerable time after the union of the fracture has been completed.

Velpeau, writing on this fertile subject in 1842, for the pages of the *Dictionnaire de Médecine*, occupied himself chiefly with the diagnosis. He pointed out two conspicuous—and hitherto undescribed—physical signs, which he professed to believe must secure the surgeon of the future from possible error. The first of these is the constant presence of the deformity "*en Z*," which he asserted to be pathognomonic of the peculiar fracture which engages the carpal segment of the radius. The second is the elevation of the external group of radial tendons; which, instead of lying, as in the normal state, close to the surface of the bone, will be found to stand out prominently beneath the skin, separated from the back of the lower part of the radius by an interval of six or eight millimetres. The Z-shaped distortion is evident to the eye, whether the affected limb be viewed in profile or anteroposteriorly. In the former aspect, one extreme limb of the Z is formed by the axis of the radius, the other by the vertical axis of the carpus; while the intermediate line of junction is formed by a line drawn from the inferior extremity of the prominence formed at the seat of fracture in front, to the superior extremity of the carpal prominence behind. The general aspect of the back of the limb at the seat of fracture he likens to that of a dinner-fork.

This same year of 1842 marks an epoch in the literature of fractures of the lower end of the radius, for it also saw the publication of the important memoir of Voillemier, the most elaborate and exhaustive which had yet appeared on the subject. According to this ingenious writer, the form of fracture which is most frequently met with in this situation is that which he describes under the name of *fracture par pénétration*. For a correct appreciation of his hypothesis, we must make ourselves pretty accurately acquainted with the structure of the lower end of the radius. The layer of compact tissue, which forms nearly the whole thickness of the shaft of this bone through the greater part of its length, rapidly diminishes in thickness as it approaches the carpal extremity; and is, for the last centimetre or so, nearly as thin as ordinary parchment. In front, a layer of tolerable thickness is prolonged a little

further down than on the posterior surface. Accordingly, in a fall on the hand, when the force is transmitted directly from the carpal bones to the lower end of the radius, a solution of continuity takes place at the level where the investing wall of compact tissue has nearly ceased to exist; and the continuation of the force causes the solid tube of compact tissue to penetrate the comparatively fragile substance of the spongy mass beneath. If the force has been moderate, the degree of impaction is slight, merely causing a firm interlocking of the fragments; whereas if the violence happens to be extreme, the superior fragment continues to descend, and, crushing the carpal end between it and the bones of the wrist, breaks it up into a number of small pieces. In this way is established the condition described by Dupuytren under the name of *fracture par écrasement.*

The oblique position of the limb at the time of falling causes, according to this writer, the force to tell more effectively on the posterior part of the articular end of the bone. This effect is also further emphasised by the fact that this part rests more directly on the carpal bones when the wrist is extended; and, on account of the forward curvature of the lower end of the radius, is placed more in the line of the long axis of the bone. Accordingly, the impaction of the upper into the lower fragment commences posteriorly; while the latter is, at the same time, carried somewhat backwards. On this account, the posterior wall of the upper fragment penetrates the spongy tissue of the lower; while the anterior wall, on the other hand, is found to overlap that of the lower fragment in front, so that the resulting condition established on this aspect is a mutual interpenetration—almost confined to cancellous tissue. A similar graduation will be found to exist when we examine the seat of fracture from without inwards. The outer compact wall of the upper fragment will be found to have penetrated the carpal piece in the direction of a vertical plane, which, if prolonged, would separate the styloid process from the shaft of the bone; while the inner surface will be found to over-ride that of the lower fragment.

The obliquity of the plane of fracture, then, according

to Voillemier, is but apparent; and the deception is due to the backward deviation of the lower fragment, and the greater depth of the posterior penetration. The evidence upon which he relies as being absolutely conclusive of the truth of his theory, and which he never failed to find when search was made, is a vertical line of compact tissue imbedded in the cancellous structure of the lower fragment. This, when traced upwards, is always found to be continuous with the investing compact structure of the shaft.

In the rarer cases in which the lower fragment undergoes forward displacement, the line of imbedded compact tissue is found to be continuous with the anterior wall of the shaft. And in no case of this fracture does a vertical section display both an anterior and a posterior line of penetrating compact tissue, even when the carpal fragment has undergone but the minimal amount of deviation from its normal axis. From the apparent dilemma offered by the latter class of case, Voillemier extricates himself by pointing out that, although reciprocal penetration always takes place, the compact investing layer of the lower fragment is so extremely fragile that it offers, practically, no resistance; and is, in a great measure, broken up at the time of the injury.

Another mechanical explanation is offered by this writer to account for the occurrence of a much less frequent form of fracture which is met with in this vicinity. Experiments on the cadaver had proved to him that extreme flexion or extension of the hand nearly always had the effect of wrenching off a piece of the lower end of the radius; and in this way, he believed, should be explained the epiphysary disjunction so often found in young subjects. A fracture occurring in this way, in more advanced life, sometimes engaged the articular surface, and removed an oblique slice, either anteriorly or posteriorly; while, in other cases, it detached a fragment of the usual length, inclusive of the whole thickness of the bone. He includes all such cases under the generic name of *fracture par arrachement*. This he would make to include all those cases in which, after a history which would lead to a suspicion of fracture, the predominant symptoms indicate

rather the existence of a sprain—where fixed deformity and crepitus are absent, and an obscure mobility is the only local sign justifying the opinion that a solution of continuity of the bone has taken place. He gives two remarkable cases in point. In one, a fall on the anterior surface of the lower half of the hand was the cause of the fracture; in the other, a very powerful young man had had his wrist violently flexed by a friend while engaged in some kind of athletic play. In both the symptoms were of the obscure kind above referred to.

With regard to the local signs of the typical form of fracture of the carpal extremity of the radius, Voillemier insists that the abduction of the hand on which Dupuytren lays so much stress, is more apparent than real. In those cases in which it is most evident, the axis of the hand is merely brought to approach that of the forearm; but in the great majority of cases, according to him, the hand completely preserves its normal position of adduction. He dwells at some length on the features of the antero-posterior distortion of the limb; in which the long axis is broken up into three parts, forming so many inclined planes meeting at obtuse angles. One of these is that of the axis of the upper fragment; a second is formed by that of the lower; while a third is formed by that of the carpus and metacarpus. The radial border of the limb will be found to present a similar deformity; so that, laterally, as well as antero-posteriorly, a single *coup d'œil* will suffice to detect the characteristic deformity "*en Z*," as it was very happily named about this same date by Velpeau. Voillemier entirely rejects the rotatory movement of the carpal fragment around the triangular fibro-cartilage which had been so carefully described by Goyrand, as well as the *mouvement en bascule* of Pouteau; while the very unmistakable deformity, together with the absence of premature mobility and of crepitus, are accounted for by the mutual impaction of the fragments of the broken bone.

Nélaton published his great work—the *Pathologie Chirurgicale*—in 1844. In this he adopts the impaction theory of Voillemier; with the slight modification that mutual impaction very rarely occurs—the brachial fragment only

penetrating the carpal, and only at the posterior part. He also makes the plane of fracture transverse; but, contrary to the expressed opinion of Voillemier, believes that abduction of the hand is frequently present. The triangular fibro-cartilage generally loses its ulnar attachment, either by laceration of its fibres or fracture of the styloid process of the ulna; and, accordingly, shortening of the broken radius is permitted to take place, with a semi-luxation of the inferior radio-ulnar articulation. He describes in terms more clear, perhaps, than those of any preceding writer on the subject, his views on the mechanism of the fracture. The forearm, in a fall on the hand, forming a right angle with the latter, comes to press directly at its carpal end, on an arch formed by the first row of carpal bones. This latter resists in supporting itself (1) on the ground by its internal extremity, which is formed by the pisiform bone, (2) on the trapezium by its external pillar—formed by the scaphoid, and (3) on the central segment—formed by the os magnum and unciform. The radius being thus pressed between the weight of the falling body on one side, and the resistance of the ground, transmitted through the carpal bones, on the other, yields at a short distance from the articulation.

I have already referred to Bouchut's account of his experiments on the dead body with the view of deciding the question of the possibility of producing a dislocation of the wrist-joint. He sacrificed to his zeal for truth both forearms of twenty bodies, but all his efforts to produce a carpal luxation were found useless. The continuity of the radius yielded, in every instance, either to extreme flexion or extreme extension—more easily to the latter. At an earlier date (1832) Malgaigne had firmly denied that there was such a thing on record as a *bonâ fide* example of dislocation of the wrist; and after critical examination, rejected without compromise the only three cases that the literature of surgery then afforded, and which had been reported on the respective authorities of Ravaton, Thomassin, and Cruveilhier. In a valuable essay on the same subject, published two years later by Roquetta, the latter arrives at the same conclusion.

In 1845 Bonnet, of Lyons, published the results of his experiments on the cadaver in this connection. He nearly always succeeded in fracturing the carpal end of the radius by forcible extension of the hand, but all his efforts to obtain such a result by flexion entirely failed. His efforts in the latter direction ruptured tendons and ligaments, and occasionally even fractured some of the carpal bones, but made no impression on either of the bones of the forearm.

In 1846 the views of Voillemier, which at that date had obtained almost supreme sway, were ingeniously contested by Jarjavay. This surgical critic asserted that Voillemier had been misled by the appearances presented by united fractures, from the fact that the periosteum, which is very strong on the posterior aspect of the carpal end of the radius, is seldom torn in these cases; but, becoming detached for some distance upwards and downwards from the seat of fracture, leaves a more or less considerable subperiosteal space, which in the progress of union becomes filled up with spongy osseous tissue.

In his splendid and well-known work on fractures and dislocations, Malgaigne examines the different theories of this lesion, which had been propounded up to date, and gives special attention to three—(1) The inflexion hypothesis of Nélaton, (2) the penetration theory of Voillemier, and (3) that of *arrachement*, to which attention had previously been called by Voillemier and others, but to which Malgaigne accords a position of importance to which it had not till then been elevated.

In 1851 Verneuil published the results of a large series of experiments on the dead body, with the view of deciding the conditions which led to the establishment of the characteristic deformity; and especially of the abduction. They had led him to believe that this feature could not exist without previous laceration of the triangular fibrocartilage, or breaking off of the ulnar styloid process.

In 1852 Fouchet presented a number of specimens of this lesion to the *Société Anatomique*, and announced his belief that the mechanism of the fracture was usually that of *arrachement*. Impaction may take place, but he does not look upon it as an essential feature; and he explains

the backward displacement of the carpal fragment by the *mouvement de bascule* of Pouteau.

A new and rather paradoxical theory was propounded by M. López in his inaugural thesis of 1860. According to this writer, the interosseous ligament plays the principal *rôle* in the mechanism of fracture of the lower end of the radius—the position of the solution of continuity being determined by the absence of that supporting membrane from the bone towards its carpal extremity.

M. Lecomte, who undertook the refutation of the thesis of M. López, adopted definitely the theory of *fracture par arrachement*. He combats the idea of Nélaton that the radius gave way because it was placed between two opposing forces; and believes that the supporting columns which Nélaton described do not come to press against the surface of the ground at all. This statement he attempts to prove by the simple experiment of marking with ink on the palmar surface of the wrist the respective prominences formed by the pisiform and trapezium bones. When this marked hand was placed in an extended position on white paper the mark of the pisiform was never impressed on the surface. According to the opinion of this observer, the most important factor in the *arrachement* of the lower end of the radius is the anterior radio-carpal ligament. Divide this ligament, and no degree of subsequent extension of the hand will affect the continuity of the lower end of the radius; but the fracture is not produced by forcible flexion even when this ligament has been left intact. Impaction may or may not exist; it is not by any means an essential feature. He agrees with Jarjavay that the preservation of the posterior periosteum is a source of subsequent deception, as it leaves a space for the formation of a deposit of new osseous tissue between it and the underlying surface of bone; which would subsequently give rise on section to the appearance so suggestive of penetration by the upper fragment even where this had never occurred.

The ablest and the most uncompromising of all the opponents of Voillemier's views of the mechanism of Colles's fracture was our distinguished fellow-countryman, Professor R. W. Smith, of the University of Dublin. In his very valuable work on "Fractures and Dislocations," he

upholds with the greatest firmness the opinion that the doctrine of fracture with penetration is untenable; and that the ingenious French surgeon had allowed himself to be too easily imposed upon by the fallacious appearances sometimes presented by consolidated fractures of the lower end of the radius. Smith believed the occurrence of any appreciable degree of impaction in these fractures, while the ulna remained unbroken and the ligaments connecting its lower end with that of the ulna still intact, to be a physical impossibility. He explains the presence of Voillemier's demonstrative line of compact tissue by subperiosteal osseous deposition; while he points out another fact of great significance which seems to have escaped the notice of all previous observers—that the distance between the lamina of compact bone and the posterior surface of the lower fragment does *not* correspond to the extent of the backward displacement of the latter, as it should if the hypothesis of the French surgeon were correct. He also points out the important fact that the length of the supposed penetrating line of compact tissue does *not* correspond to the amount of posterior shortening of the radius. The thickening of this layer, which Voillemier himself had found to exist in old fractures, and which he was obliged to confess his inability to explain, Smith readily accounts for by the deposition of new osseous matter. The deformity so characteristic of this familiar fracture is referred by him to muscular action. The preternatural mobility and crepitus which are supposed to be characteristic of solution of osseous tissue, and which are usually so obscure in this case, can, he believes, always be obtained after having used sufficient extending force to reduce the deformity. The plane of fracture Smith believed to be transverse—at least in the great majority of cases; and, even in the rare instances in which it is oblique, he does not admit the possibility of over-riding of the fragments.

Of the subsequent contributions to the literature of Colles's fracture, one of the most interesting is that of Chiene, of Edinburgh. To a description of the dissection of a recent specimen, this accomplished surgeon adds some ingenious remarks on the nature of the mechanism by which the solution of continuity is produced. In falling

on the hand, the force, which is received chiefly by the ball of the thumb, is transmitted through the carpus to the lower end of the radius. The nature of the resulting lesion will then vary with the angle of inclination which the forearm makes with the surface of the ground. If this be less than 60° the line of force travels upward *anterior* to the axis of the forearm, and the whole shock is borne by the lower end of the radius, which gives way near its carpal extremity. But if, at the moment of impact, the angle of inclination be greater than 60°, then the line of force, instead of passing in front of, passes directly up, the arm; and "the usual result is either a severe sprain of the wrist or a dislocation of both bones of the forearm backwards at the elbow-joint."

Chiene admits the existence of a slight degree of penetration in many cases, but not sufficient to justify the application of the term *impaction*; by which he would understand the condition of parts in which the distortion cannot be removed by the use of justifiable force. Such slight penetration did exist in the specimen which formed the text of his communication, and the thin slice of bone—much deeper behind than in front—which had been separated from the carpal end of the radius, was found to be divided into three fragments by two vertical fissures. The tip of the ulnar styloid process was also found broken off, but the triangular fibro-cartilage had preserved its attachments. The inferior fragment, in addition to the backward displacement and partial rotation on its transverse axis, was found to have undergone the form of rotation which had been specially described by Goyrand—in the arc of a circle whose centre is placed at the ulnar attachment of the triangular fibro-cartilage.

Dr. Gordon, of Belfast, found, as the result of the examination of twenty-seven old specimens of Colles's fracture, that the distance of the line of fracture from the carpal articular margin varied, posteriorly, from three-eighths to one three-quarter inches; and anteriorly, from a quarter to two inches. In nineteen cases the fracture was oblique from before backwards. In the other eight the plane of separation was directly transverse. To the question of the existence of impaction he paid no attention; but he argues

very strongly in favour of the "cross-breaking" mechanism of the fracture, produced by the strain of hyperextension. The idea that the solution of continuity is produced by violence transmitted through the carpus he summarily rejects; as he believes that if this were the true explanation the fracture would be found to radiate from the point struck.

Among the English surgeons of comparatively recent years who have taken up the question of the mechanics of Colles's fracture, the most emphatic in expression of opinion was, perhaps, the late Mr. Callender, who surpassed even Voillemier himself in the vehemence with which he advocated the hypothesis of impaction. Basing his belief on the evidence afforded by the dissection of three specimens, in each of which the fracture had been produced by very extreme violence, he considers that "there can be no question but that impaction is the cause of the displacement."

The only indisputable evidence which can be collected on the much-vexed question of impaction is that derived from the examination of recent specimens. Of the records of such, Dr. Wight, of New York, has collected a series. One is by Professor Hamilton, of that city, in which the autopsy showed the detachment of a considerable fragment from the posterior lip of the articular surface—the direction of the plane of fracture being upwards and backwards.

Two specimens were reported by Mr. Erichsen. In the first, the lower fragment was split into three portions, between which the inferior extremity of the upper fragment was firmly impacted to the depth of half an inch. The largest of the three pieces of the carpal fragment comprised the whole of the articular surface, which had remained uninjured. In the second of his cases, the injury was the result of a fall from a height of twenty-five feet; and the lower fragment, which had been separated along a transverse plane about half an inch above the articular extremity, was found to be completely comminuted.

Two other cases were examined by Professor Gross, in one of which the carpal fragment was found separated into two pieces by a fissure leading into the joint; in the other, a more extensive degree of comminution had taken place.

In an example recorded by Professor E. M. Moore, the fracture was found to be transverse; and, although crepitus could not be detected during life, there was not the slightest trace of impaction. The tip of the ulnar styloid process had been wrenched off with the internal lateral ligament of the wrist. In the second forearm of the same body, a fracture of the carpal end of the radius was found to exist; which ran in an oblique direction, from above and behind downwards and forwards. The apex of the ulnar styloid process was also broken off.

Dr. Hector Cameron, of Glasgow, has reported the results of the examination of two recent specimens. In the first, the line of fracture was transverse from side to side, and oblique from before backwards and upwards; the lower fragment being one inch in length behind, and a quarter of an inch in front. The carpal fragment was slightly comminuted; and the lower end of the upper fragment, which was extremely rough and denticulated, had sent a toothed process into the spongy tissue of the lower. This had so firmly nailed it in its new position that it required a great deal of force to separate them. In Dr. Cameron's second case, the fracture was transverse in all directions; and was situated about an inch above the carpal extremity. In front, the break was hardly complete, the periosteum having remained untorn; but there existed a well-marked backward hingeing of the carpal fragment, and examination of the posterior aspect showed a complete solution of continuity. The compact outer layer of the upper fragment was driven (posteriorly) into the spongy tissue of the lower, splitting the latter into three pieces; which it, at the same time, held securely together—the impaction being complete and irreducible.

More recently Dr. Pilcher, of New York, advanced an entirely new theory of the nature and mechanism of fractures of the lower end of the radius. This part of the bone is formed of "a cone of cancellous tissue, which is grasped above by a cylinder of strong, thick, compact walls. All force transmitted to the lower extremity, other than that of very great intensity, is here finally decomposed and repelled." If, on the other hand, the violence be very great, the carpus acts as "a blunt wedge, driven against

the concave articular surface of the radius with sufficient violence, it will split it longitudinally. There is no possibility of a cross-breaking strain being exerted; and if in any case transverse lines of fracture are found, they must have been occasioned by some other mechanism." This theory is borne out by the evidence gathered in the examination of eleven specimens of recent fracture collected in the Museum of the New York Hospital, and one in the possession of Professor Hamilton. Ten of the twelve present both vertical and transverse lines of fracture. In some, the vertical fissures extend into the shaft above the level of the transverse solution of continuity. But the most remarkable corroboration of this writer's view was afforded by a specimen presented to the Boston Society for Medical Improvement by Professor Bigelow, in 1858. In this injured radius, the carpal articular surface presented a star-shaped crack; from which corresponding fissures passed up into the shaft for more than an inch, but without transverse fracture. It was the second specimen of the kind that had been met with by Professor Bigelow.

In drawing this communication to a close, I will just observe that an examination of all the facts and theories which I have collected regarding this subject must, I think, leave no doubt on the mind of the intelligent inquirer that a great variety exists both in the form and probably also in the mechanism of the production of the fractures of the lower end of the radius. At the last meeting of this Section a most interesting specimen of the rare occurrence of fracture in this position, with *forward* displacement of the carpal fragment, was exhibited by the ex-President of the Royal Academy of Medicine, Professor E. H. Bennett. Not long since I had an opportunity of examining the wrist of an elderly lady which displayed the typical deformity of an unreduced "Colles." The accident had happened in her youth. She fell backwards on the ice in skating, and had tried to break the fall by reaching her hand behind her. It, accordingly, first sustained the shock of the fall, palm downwards, in contact with the ice. The diagnosis was that of a sprain, and she was treated accordingly. The specimen which I have had the honour to exhibit still retains a portion, at least,

of the original displacement. It also presents the slight peculiarity of having sustained the solution of continuity at a somewhat higher level than usual—approximately at the "specific distance" meted out by Abraham Colles himself. Most of my hearers, I am sure, are aware that the great Dublin surgeon whose name is associated with this lesion never had an opportunity of dissecting a recent specimen of his own special fracture. Accordingly, as the appearances of the recent specimens are deceptive, he located the lesion at a distance of an inch and a half from the carpal extremity. The future of such discussions regarding fracture will, of course, be made much shorter and more luminous by the use of the X-rays. There will be fewer hypotheses, and more satisfactory diagnosis and treatment. The innumerable expressions of opinion regarding the features of Colles's fracture are suggestive of the travellers' hot dispute regarding the colour of the chameleon. In this connection, Professor E. H. Bennett, probably the highest authority on the subject now living, has well observed that "we have ample proof that the simple transverse fracture without impaction, the impacted, and the *fracture par écrasement*, with a shattered lower fragment, are all possibilities." And there can be no reasonable doubt that modifications of the mechanism of production exist in corresponding variety. I have not myself come forward as the advocate of any one hypothesis, for I do not believe that any one can be successfully manipulated so as to adapt it to all cases; nor do I attempt to broach any new theory, for I think there is no room left for further innovation, and the theories with which we are already acquainted will, when judiciously applied, be found amply sufficient. I must, accordingly, close with an apology for trespassing so far on the time and patience of the members of the Pathological Section. I have been encouraged to do so by the belief that even a hasty summary of our knowledge of the subject would be favourably listened to by the compatriots of the three surgeons to whom we are indebted for the original description and the soundest teaching on the subject—Abraham Colles, Professor R. W. Smith, and Professor E. H. Bennett.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

RECENT WORKS ON PUBLIC HEALTH.

1. *The Principles of Hygiene: a Practical Manual for Students, Physicians, and Health Officers.* By D. H. BERGEY, M.D., First Assistant, Laboratory of Hygiene, University of Pennsylvania. London and Philadelphia: W. B. Saunders & Co. 1901.

1. DR. BERGEY'S work comprises 495 pages, of excellent paper and splendid letterpress. There are 20 chapters dealing with air, heating, ventilation, food, water, sewage, exercise, clothing, personal, industrial school, military, and naval hygiene, soil, dwellings, causes of disease, disinfection, quarantine, and vital statistics.

In Dublin, and in Ireland generally, tuberculosis prevails more than in England and Scotland. In Dr. Bergey's work it is stated that detailed studies of vital statistics in several of the largest American cities show that a large part of the excessive death-rate amongst children of Irish mothers is due to tubercular diseases and to the effects of alcohol. In Baltimore it is stated that the single males have a death-rate of 9·19, the married males, 8·98, and the widowers, 26·9. This would appear to show that the conjugal state has a beneficent influence on the duration of life, but in reality it does not prove anything. Naturally there should be a higher death-rate amongst widowers, as they must be much older than the benedicts. The table, to be useful, should show the death-rates amongst single, married, and widowed males of the same ages. This was done in France, many years ago, by Bertillon. In Baltimore the widows have a death-rate of 12·02, whilst the married women's rate is 9·76, and that of single women 6·53. Another strange thing is that whilst widowers die at the rate of 26·9 per 1,000 in

Baltimore, the Washington widowers have a mortality of 40·17 per 1,000.

2. *A Manual of Practical Hygiene for Students, Physicians, and Medical Officers.* By CHARLES HARRINGTON, M.D., Assistant Professor of Hygiene in the Medical School of Harvard University. London: Henry Kimpton. 1901.

3. Dr. Harrington's work is a substantial volume of 729 pages, and it contains 12 plates and no fewer than 105 engravings. The peculiarity of this work is the large space given to the subjects of essential interest to the pure sanitarian. It is assumed that certain subjects, such as bacteriology, have already been studied by the reader in the course of medical education, or that if he wishes to be a specialist in that department of science he should study it in special works on bacteriology. The construction of sewers, the nature and strength of building materials, and some other matters which fall within the province of the Architect and Engineer are lightly dealt with or omitted. On the other hand, food, water, air, soil, disinfection, refuse disposal, military, naval, and personal hygiene, hygiene in relation to occupations, and vital statistics are minutely treated of.

We have been particularly struck with the section on plumbing, especially the directions for the construction of the soil pipe. We agree with the author as to the superiority of iron over lead in the construction of soil pipes; it is cheaper, more durable, more resistant to injury, and not liable to be perforated by rats or mice. It should, however, have its joints cemented with lead run into them in a molten state. The sections relating to disinfection are thoroughly up-to-date. This work is one of the best of its kind ever published.

3. *Hygiene and Public Health.* By LOUIS PARKES, M.D., &c., and HENRY KENWOOD, M.B., &c. London: H. K. Lewis. 1901.

3. Several years ago Dr. Parkes published a book of modest size on Hygiene and Public Health. It rapidly became a favourite with medical officers of health and students studying sanitary science. It ran through five editions, each becoming larger

than its immediate predecessors. In the book under notice Dr. Parkes is associated with another deservedly well-known sanitarian, Dr. Kenwood, Medical Officer of Health for Stoke-Newington, and the size of the book is nearly double that of the fifth edition of Dr. Parkes' work. It embraces 732 pages, and is copiously illustrated. There are 12 chapters on the following subjects:—(1) Water; (2) the collection, removal, and disposal of excretal and other refuse; (3) air and ventilation; (4) warming and lighting; (5) soils and building sites; (6) climate and meteorology; (7) exercise and clothing; (8) food, beverages, and condiments; (9) the contagia, communicable diseases and their prevention, hospitals; (10) disinfection; (11) statistics; (12) sanitary law and administration. All these subjects are treated in a concise but clear manner, the more important portions of each, and those specially relating to public hygiene, being elucidated with sufficient fulness.

Very up-to-date information is given in reference to disposal of sewage and refuse, and in the chapter on this important matter we agree with the authors that the best and most sanitary way of getting rid of dust-bin refuse is by cremation. In Dublin this system is carried out, but only to a small extent. It is curious that the refuse once set on fire continues to burn without the aid of fuel. This shows how imperfectly fuel is consumed in many of the Dublin houses.

An excellent account is given of the biological method of sewage purification. The fact that under the influence of microbial life the combined nitrogen of the sewage is not converted wholly into nitrates, nitrites, and ammonia, or left in organic combination, shows that certain microbes have the power of eliminating free nitrogen.

Dr. Kenwood is well known as an authority on the subject of disinfection, in which domain of sanitary science he has carried out many important investigations. As might be expected, the work under notice contains a very instructive chapter on disinfection. For gaseous disinfection of rooms formic aldehyde is recommended. Mercuric chloride is also favourably mentioned. The authors appear to prefer *saturated* steam (steam under pressure) for disinfection of clothing. The book is really an admirable one, and is specially

adapted to the wants of students studying for Public Health diplomas.

4. *Handbook of Public Health.* By JOHN ORR, M.D., &c. Edinburgh: E. &. S. Levingston. 1902.

4. This is a concise little book of 236 pages, which will prove useful to those studying for diplomas in Public Health. After a thorough reading of the larger books required for this study, the candidate would do well to read right through Dr. Orr's treatise. It treats on every subject, except meteorology, upon which the candidates are sure to be examined. As the book is of limited size, the author has put into it chiefly the most important points in connection with the various subjects treated on—soil, air, water, food, communicable diseases, &c.

The Healing of Nerves. By CHARLES A. BALLANCE, M.S., F.R.C.S., and PURVES STEWART, M.A., M.D., M.R.C.P. London: Macmillan. 1901. Demy 4to. Pp. 112.

IN this remarkable monograph the authors describe the results of experiments made on monkeys, dogs, and cats, in which nerves were cut through and either immediately sutured, or in which the ends were not sutured at all, or in which a portion of nerve was excised and a portion of nerve sufficient to fill the gap was transplanted, either from the same or another animal at varying times after the primary operation. Besides the material got from the experimental animals a number of specimens were obtained from human subjects who had to undergo operations of various kinds for the relief of injuries to nerves.

The nerves were hardened in Müller's fluid or in formalin, and were stained by Weigert's method for the medullary sheaths, Cox's modification of Golgi's method for the axis cylinders, Stroebe's method for the axis cylinders, and Van Gieson's method for the cellular and protoplasmic structures.

The experiments were numerous, and the observations appear to have been carried out with great care and skill. The appearances seen are represented in 16 coloured plates,

containing a very large number of beautifully executed figures.

Two views are held as to the process by which nerve regeneration takes place. According to the more generally received theory, when healing occurs the distal segment takes no part in the formation of the new axis cylinders, but these are derived entirely by outgrowth from the old axons contained in the proximal segment, and merely penetrate the old sheaths of the distal portion. According to this view no regeneration can occur unless the distal segment is united to the proximal.

Another doctrine, up to this held only by a rather small minority of observers, is that the new fibres in the distal segment, axis cylinders and sheaths, are formed from pre-existing cells in the distal segment itself, and subsequently become attached to the fibres of the proximal end, thus restoring conductivity in the nerve.

Those who hold the first theory are styled by the authors the "central" school. Those who maintain the second view are called the "peripheral" school.

The observations detailed in this work have led the writers to rank themselves unhesitatingly in the peripheral school.

When a nerve is divided the distal segment and a small portion of the central segment undergo a degenerative process. There is first an invasion of leucocytes which reaches its maximum early—at about the 18th hour. The connective tissue cells begin to proliferate during the second day after the section, rapidly multiply, and from the third day begin to wander into the cut nerve, and take the place of the leucocytes, which progressively diminish in number. On the fourth day commences an absorption of the myeline sheath and axis cylinders of the old fibres by the proliferated connective tissue cells, and by five weeks it is nearly completed. As the absorption goes on the connective tissue cells diminish in number, and those which remain become spindle-shaped, and form fibrous tissue. During all this time a proliferation of the neurilemma cells is taking place. They at first take some part in the absorption of the old fibres, but soon give over this to the connective tissue cells, and themselves proliferate in columns which, and the cells composing them, preserve the original longitudinal direction of their parent

cells. From their opposite poles the cells project fine protoplasmic processes, which gradually increase in length.

The axis cylinders and medullary sheaths undergo no apparent change until the fourth day, when they commence to undergo fragmentation, which rapidly becomes more intense—the smaller fibres resisting longer than the larger. The fragmented axis cylinders now cease to be distinguishable from the myeline. The fatty remains of both are gradually removed, chiefly by the action of the proliferated connective tissue cells. The neurilemma cells take but little part in this process of absorption, being mainly concerned in the subsequent process of regeneration. The degeneration process takes place in the entire length of the distal segment, and with equal rapidity whether the nerve has been sutured or not. In the proximal segment only that part near the section is affected.

Regeneration takes place by the same process whether the nerve has been sutured or not, but it is only after suture that the process is completed in the distal segment. The so-called "end bulb" at the extremity of the proximal segment is apparent within twenty-four hours, and is caused by the curling up of the divided fibres. Subsequently new fibres are produced here by the neuroblastic agency of the neurilemma cells in the same way as occurs in the distal segment. Here, if suture has been carried out, at the end of three weeks numerous "spider cells" are seen. These shoot out axis cylinders, which run longitudinally, overlap, and anastomose. These neuroblastic spider cells are identical with the proliferated neurilemma cells of the old nerve, and thus the new axis cylinders are formed within the old neurilemma sheaths. The new medullary sheaths appear at the fourth week, "when it is laid down by a process of secretion along one side of a spindle-shaped neurilemma cell, the medullary sheath being probably wrapped round a preformed young axis cylinder."

It is pointed out that the process here described resembles closely that described in the growth of nerves in the regenerating tail of the lizard by Galeotti and Levi.

If the cut nerve has not been sutured, regeneration still takes place in the distal segment, which evidently is incom-

patible with the truth of the "central" theory. The new fibres, however, appear later than after suture, and never attain full maturity unless junction of the divided nerve is effected. Evidently some stimulus afforded by the conduction of impulses is necessary in order to permit of their full development.

Where suture is impossible, and the two ends of the nerve are joined by a piece of transplanted nerve, this undergoes degeneration. It is invaded by leucocytes and connective tissue cells, which cause fragmentation and absorption of the old fibres. The regeneration which occurs is effected by neurilemma cells, but not those of the old fibres of the graft, but by neurilemma cells, which invade it from both ends of the divided nerve, and penetrate the graft along with blood vessels.

A certain number of clinical observations are recorded. After primary suture in dogs motor power begins to appear in about four weeks. In a case where two inches of sheep's sciatic were transplanted into a gap in the human ulnar nerve, sensation began to return in twenty days, and was perfect in six months. In cases of primary suture in man, most observers agree that restoration of function does not occur until two months after the operation. In cases of secondary suture sensation always returns before motion. The recovery is often surprisingly rapid. Thus, where the ulnar nerve was joined nine years after division sensation began to return on the eighth day; in another case of two and a half years' paralysis, on the third day; in another in a week; while MacCormac reports cases where sensation returned in a day, and another in thirteen hours after suture; and the authors record an instance where, after secondary suture of the external popliteal nerve, sensation returned one and a half hours after the operation. These and similar cases are explained by the supposition that the nerve fibres are already formed in the distal segment, and merely require to join those in the proximal end, in order to resume their conducting function. The results got after transplantation are somewhat contradictory. The authors give a case where two inches of sheep's nerve were transplanted into the human ulnar, and sensation returned on the twentieth day. In

another case where six inches of bullock's sciatic were transplanted into a human sciatic no return of sensation had occurred five months after the operation.

It is evident that if the conclusions arrived at by the writers of this monograph are admitted, we must discard the neuron theory of the nervous system. Doubts have recently been thrown on its truth from many sides, and the authors, while declining to express an opinion on the embryonic origin of the neurilemma cells, whether epiblastic or mesoblastic, claim to have shown that "the peripheral nervous system is to be regarded as composed of chains of cells, set end to end, whose axis-cylinder processes fuse together to form continuous paths—the peripheral axis cylinders." They think that support is given to this view by the absence of regeneration in lesions of the central nervous system, which they explain by the absence of neurilemma cells in the fibres of the nerve centres.

Whatever may be the fate of the views here put forward, there can be no doubt that this work must be looked on as a most important contribution to the solution of a question whose importance in both a practical and scientific point of view can scarcely be over-estimated.

University of Pennsylvania: Contributions from the William Pepper Laborartoy of Clinical Medicine. (Reprints.) No. 2. Philadelphia. 1901.

This volume contains sixteen papers, and is accompanied by another which is not bound up with the rest. They are all of considerable interest and value, and this large amount of work, emanating from the William Pepper Laboratory so soon after the appearance of the large first volume of contributions, speaks for the vigour and healthy condition of this admirable institution.

The earlier papers are on subjects connected with the nervous system. 1. The pathological changes in the neuron in nervous disease. 2. Pathological report on a case of dermatitis vesiculo-bullosa et gangrænosa mutilans manuum (Duhring), with a consideration of the relations of vascular and nervous changes to spontaneous

gangrene and Reynaud's disease. 3. Renaut's bodies in a case of vesiculo-bullous dermatitis and gangrene. 4. A case with the symptoms of cerebro-spinal meningitis with intense and general alteration of the nerve cell bodies, but with little evidence of inflammation. 5. A case of malaria presenting the symptoms of disseminated sclerosis, with necropsy. 6. Cerebellar lesions without cerebellar symptoms. All these papers are by Dr. William G. Spiller. 7. Asthenic bulbar palsy, by Drs. Chas. W. Burr and D. J. M'Carthy. 8. The rapid diagnosis of rabies, by Drs. Ravenel and D. J. M'Carthy. 9. Remarks on the importance of the so-called specific lesions of rabies, by Dr. W. G. Spiller. 10. Acute internal hydrocephalus; a clinical and pathological study, by Drs. C. W. Burr and D. J. M'Carthy. Then follow papers on hæmatology. 11. Observations of blood changes following cœliotomy, by Dr. C. Y. White. 12. The blood in infancy and childhood, by Drs. Alfred Stengel and C. Y. White. 13. Granular degeneration of the erythrocyte, by Drs. C. Y. White and William Pepper. Finally, miscellaneous papers. 14. A study of congenital sarcoma of the liver and suprarenal, by Dr. William Pepper. 15. The carbohydrates of the urine in diabetes insipidus, by Dr. David L. Edsall. 16. Carcinomatous degeneration of a papilloma of the conjunctiva with infiltration of the eyelids, by Drs. S. D. Ridley and E. A. Shumway. 17 (the unbound paper). A critique of certain methods of gastric analysis, by Dr. David L. Edsall.

Many of the papers are of far more than average value, many are handsomely illustrated by plates and engravings. The whole volume is in the highest degree creditable to the Laboratory from which it proceeds.

Handbuch der physikalischen Therapie. HERAUSGEGEBEN VON DR. A. GOLDSCHEIDER und DR. PAUL JACOB. Theil II. Band I. Leipzig: George Thieme. 1902. Ss. 478.

WE have pleasure in calling the attention of our readers to the appearance of another part of this important encyclopædic work. In the previous parts the different methods of physical

treatment (that is, all methods of treatment except that by administration of drugs and by dietetics) were fully described, and the various modes of application, the apparatus required, and the physiological effects which each mode of treatment produces, were detailed in the most exhaustive manner. In the present part the diseases are considered *seriatim*, and the mode of application to each of the different physical methods is described, together with the effects which may be expected to follow. Thus in the first chapter Professor C. Kopp, of Munich, writes of skin diseases, and in eight sections describes successively the treatment of this class of diseases by baths, sea air and bathing, hydropathy, massage, gymnastics, electricity, and light. So of the other diseases—muscular rheumatism, by Dr. Friedländer; muscle atrophy, by Dr. Ludwig Mann; diseases of joints, including gout, by Dr. Friedländer; infectious diseases, by Kohts and Rumpf; disorders of metabolism, as Graves's disease, by Eichhorst, diabetes and corpulence, by Weintrand, and anæmia, chlorosis, and scrofulosis, by Lazarus. Diseases of the respiratory tract are sub-divided into those of the nose, pharynx, and larynx, by Professor Friedrich; with a highly interesting appendix on the treatment of stammering and defects of articulation from other than spastic causes (Stottern und Stammeln), by Dr. Hermann Gutzmann; and into those of the lungs, including pneumonia, by Professor Fraenkel; diseases of the bronchi, emphysema, and asthma, by Professor Egger; pleuritis, by Fraenkel; and chronic pulmonary tuberculosis, by Professor Renvers.

As was to be expected from the earlier instalments of this work, and from the reputation of the various writers whose names we have given, we find in this volume a magisterial treatment of each of the subjects dealt with.

As a work of reference on physical methods of treatment this handbook has no rival, and we can safely say that in the discussion of each subject nothing which is of importance fails to receive due consideration. Wherever it is necessary illustrations are introduced, which are always demonstrative and well chosen. We would call attention to the drawings illustrating the operation of intubation of the larynx in the

treatment of diphtheria, in Professor Koht's article, as good examples.

It is needless to praise a work such as this. Its reputation is already established by the earlier parts, and we can say no more of this volume than that it is worthy of its predecessors.

Clinical Hematology; A Practical Guide to the Examination of the Blood with reference to Diagnosis. By JOHN C. DACOSTA, Jr., M.D. London: Rebman. 1902. Pp. 474.

THIS very excellent work is divided into seven sections.

I. Examination of the blood by clinical methods, in which the technique of collecting the blood, estimating the hæmoglobin, counting the corpuscles, staining methods, determination of the relative volume of corpuscles and plasma, estimation of specific gravity, alkalinity, rapidity of coagulation, serum reaction, spectroscopic and bacteriological examinations are all described fully and clearly.

II. The blood as a whole, giving the general characters of the blood, its colour, odour, viscosity, reaction, specific gravity, coagulation, and describing such conditions as oligæmia, plethora, hydræmia, anhydræmia, lipæmia, melanæmia, glycæmia, uricacidæmia, cholæmia, &c.

III. Hæmoglobin, erythrocytes, blood plaques, and hæmoconia.

IV. The leucocytes.

V. Diseases of the blood, as chlorosis, pernicious anæmia, splenic anæmia, secondary anæmia, post hæmorrhagic anæmia, leukæmia, Hodgkin's disease, and the effect on the blood of splenectomy.

VI. The anæmias of infancy and childhood.

VII. General hæmatology. In this section the diseases are arranged alphabetically from abscess to yellow fever, and the blood changes in each are described.

Such is the arrangement of the matter, showing the comprehensiveness of the work. We will notice a few points which have struck us as of more than usual interest.

In speaking of the alkalinity of the blood it is stated that increased alkalinity goes hand in hand with increased

antidotal action of the blood against bacterial infection, as experiments have shown that resistance to infection can be increased by increasing the alkalinity of the blood, and that those animals who are immune have the greatest degree of blood alkalinity.

In discussing the structure of the red corpuscle the author inclines to Rollett's view that it is a soft solid without distinct limiting membrane, and thinks that the cell wall and fluid contents view, maintained by Schäfer (called Schäffer in the text) is disproved by the effects of heating. The size of the corpuscle is said to vary in different countries, being smaller in southern lands than in colder latitudes.

A feature of the book is the admirable tables which are given, in which are summarised the distinctive characters which are fully described in the text. Such a table is given on page 145, in which are epitomised the distinctions between normoblasts and megaloblasts.

The much-disputed nature of the blood platelets is thus dealt with:—"The old belief that the plaques represented a so-called 'third corpuscle' of the blood is not justified, for it has been proved that these bodies are not distinct cellular entities, but rather débris derived either from the blood corpuscles or from the plasma. Most authorities regard them as bits of globular matter extruded from the erythrocytes, others as fragments of disintegrated nuclei of the leucocytes, and still others as masses of precipitated globulin."

Under the name hæmoconia, or blood dust, Müller has described small, colourless, refractive bodies of spheroidal or dumb-bell shape, not more than 1 μ. in diameter, as of constant occurrence in normal and pathological blood. They are not fatty, take no part in the formation of fibrin, and apparently have no clinical significance.

Dr. DaCosta is inclined to doubt the identity of the coarsely granular basophile cell of the blood with the mast cell of the tissues. Although the granules in the two cells are apparently the same, the tissue cell has a nucleus smaller, more centrally situated, and richer in chromatin, and is more "explosive" than the hæmic mast-cell.

The question as to whether the different varieties of leucocytes are all stages of development of the same cell, or whether each has a separate origin, has been much discussed, and cannot as yet be said to be altogether settled. The former, or Russian view, is represented by Uskow, the latter by Ehrlich. The author thinks Ehrlich's view constitutes the "only dependable means by which many of the pathological changes in the leucocytes may be explained," and may be accepted as, on the whole, accurate. According to this view "the small lymphocyte and its mother cell, the large lymphocyte, are developed in the lymphatic tissues in the various parts of the body, wherever such structures exist. The large mono-nuclear leucocytes and transitional forms are considered probably of myelogenous origin. The poly-nuclear neutrophiles are thought to develop exclusively in the bone marrow, the great majority being evolved from the neutrophile myelocytes of this tissue, while a very limited number perhaps arise from the non-granular large mono-nuclear cells. The eosinophiles develop from the eosinophilic myelocytes in the bone marrow, while the basophilic leucocytes similarly have their origin in the basophilic marrow antecedents." "Cellular reproduction, except in rare instances, does not take place in the circulating blood stream."

The author looks on "male chlorosis" as a diagnostic myth. "Chlorosis is about as compatible with the male sex as is pregnancy." In doubtful cases a slight enlargement of the thyroid gland, frequently associated with Joffroy's sign (absence of horizontal wrinkling of the skin of the forehead and of upward curving of the eyebrows when the patient glances suddenly at the ceiling without elevating her head), is a physical sign which should always make one suspicious of chlorosis."

It is provisionally admitted, although doubtfully, that the condition known as splenic anæmia is a morbid entity.

The parasitic nature of leukæmia is looked on as so far quite unproved.

The peculiarities of the blood in infancy and childhood are fully described, and the anæmias found at these periods of life are sufficiently characterised to justify

their special treatment. These characters are thus epitomised:—"(*a*) The frequency of a low colour index (*i.e.*, the proportionate amount of hæmoglobin contained in each red corpuscle); (*b*) the common occurrence of erythroblasts, and of deformities affecting the size and shape of the erythrocytes; (*c*) a tendency towards leucocytosis and splenic enlargement; and (*d*) the frequency of myelocytes."

In speaking of appendicitis it is stated that "absence of or slight leucocytosis suggests either (*a*) simple catharrhal appendicitis, (*b*) fulminating appendicitis, or (*c*) a localised pus-focus, from which no absorption occurs. Well-marked leucocytosis indicates either (*a*) a local abscess from which absorption of toxins occurs, (*b*) general peritonitis, or (*c*) gangrene." "In the writer's experience the behaviour of the leucocytes throws a much clearer light upon the progress of the disease in both operative and non-operative cases, than it does upon the initial diagnosis, which should be determined chiefly by other clinical methods."

Enteric fever forms the subject of a long section, in which are fully described the results of blood examination from the rose spots, which is said to give positive results several days earlier than the serum test; the serum test itself with the different methods of its application and a critical examination of its value. The results are positive in about 95 per cent. of all cases, but a negative result does not exclude the diagnosis of typhoid. The serum test, the discovery of Eberth's bacillus in the blood from the spots, and the diminution in the number of leucocytes are the three valuable signs of typhoid to be got from a blood examination.

It is admitted, in accordance with the recent observations of Levy and Watson, that the alkalinity of the blood is not diminished in gout.

The alterations in the blood in intestinal helminthiasis are interesting. In Bothriocephalus latus infection the anæmia may exactly simulate pernicious anæmia; oligocythæmia, a high colour index, and nucleated erythrocytes, mostly of the megaloblastic type. In ankylostomiasis the anæmia may be extreme, but does not simulate pernicious

anæmia, as there is no prevalence of megaloblasts. In both, and even in cases of Oxyuris vermicularis which does not produce anæmia, there is an absolute and relative increase of eosinophiles.

A very full account is given of the malaria parasite, and of the changes it induces in the blood.

As an example of one of the tabular statements, already referred to, we may give the following, showing the difference between the blood in malignant disease and in pernicious anæmia:—

Malignant Disease.	Pernicious Anæmia.
Colour index usually moderate or low.	Colour index almost always high.
Oligocythæmia usually marked.	Oligocythæmia always extreme.
Tendency towards microcytosis.	Tendency towards megalocytosis.
Erythroblasts common, normoblasts always predominating.	Erythroblasts constant, megaloblasts always predominating.
Leucocytosis common.	Leucocytosis rare.
Lymphocytosis rare.	Lymphocytosis common.

On page 416 is a list of poisons, alphabetically arranged, with the blood changes induced by each.

The constant large increase in the number of polynuclear neutrophile corpuscles in the blood of rabies both in men and animals is an early and important symptom, as its absence may show a suspected case not to be rabies, although its presence does not prove the existence of the disease.

In conclusion, we would express our sense of the value of this book. It is the outcome of much research and experience in blood examinations, and shows a thorough mastery of the subject on the part of the author. At the same time he by no means unduly magnifies the importance of this branch of inquiry, but constantly dwells on the necessity of taking account of the clinical symptoms and of looking on the blood examination as only an aid, although in many cases an all-important one, in framing the diagnosis. The work is well and clearly written, and, what is too seldom the case, without any Americanisms. The arrangement of the matter is excellent, and there are good indexes of subjects and of authors. The letterpress is admirably illustrated by eight coloured plates, three charts,

and forty-eight figures in the text. The book is handsomely printed and bound. On the whole, it is a work which we can most cordially recommend to our readers as one of the best of the many which have recently appeared on the subject of clinical hæmatology.

On Disorders of Assimilation, Digestion, &c. By SIR LAUDER BRUNTON, M.D., F.R.S., &c., &c. London: Macmillan & Co. 1901. 8vo. Pp. 495.

UNDER this somewhat vague title Sir Lauder Brunton publishes a volume consisting of a reprint of papers, all of which have appeared before in different journals. It is intended as a sequel to his work on Disorders of Digestion, which was also a reprint of scattered papers. In the volume before us a considerable number of subjects are treated. The work opens with the author's Moscow address on the relationship of physiology, pharmacology, pathology, and practical medicine. Then follow several lectures on subjects connected with diabetes and glycosuria, including the attempt made to treat diabetes by raw meat with the idea that muscle contains a glycolytic ferment which might promote the destruction of sugar in the organism, an attempt which was unsuccessful. A research, carried on in conjunction with Dr. Sidney Martin, on the action of alcohols and aldehyds on proteid substances, led to the conclusion that the higher alcohols have a less powerful action in precipitating and coagulating proteids than the lower ones. But to this rule allyl alcohol is an exception, as it coagulates egg albumin powerfully, and is the only alcohol which coagulates albumoses.

Following the paper describing this research is a long article reprinted from Cassell's Book of Health, on the influence of stimulants and narcotics in health, and papers on the relative digestibility of white and brown bread, and on the pretty wide subject of indigestion. These are succeeded by the account of a research made with Dr. Cash on the absorption of gas by the intestines and the action of carminatives upon it. It is shown that while atmospheric air, hydrogen, coal gas, and carburetted

hydrogen undergo little or no absorption, carbonic acid and sulphuretted hydrogen are absorbed in large quantity, so large in the case of sulphuretted hydrogen as sometimes to cause fatal results. Carminatives do not promote the absorption of the first class of gases or of sulphuretted hydrogen, but favour the absorption of carbonic acid. The experiments were made on cats. The carminatives used were oil of cloves and asafœtida.

A number of papers follow on constipation, diarrhœa, abdominal pain and the use of codein in its treatment, on cholera and its treatment by atropin, on sprue and hill diarrhœa, on piles, successful surgical treatment of typhoid perforation, and on the use of bromide of potassium and salicylate of sodium in headache. Then we have a series of articles on hepatic disease; difficulties in diagnosis, jaundice, acute atrophy of liver, biliousness and gall stones.

In a research, made with Mr. D'Arcy Power, on the albuminous substances which occur in urine, pancreatic ferment was found in this secretion. The authors think that in these and other cases a vicious circle may be induced by the loss of this ferment. "The albuminuria leading to the excretion of pancreatic ferment, and the loss of pancreatic ferment leading to imperfect digestion with excretion and loss of its soluble albuminous products." In some cases the administration of pancreatin was found to lessen the albuminuria or even remove the albumin from the urine.

Lectures on the pathology and treatment of indigestion; on elimination and its uses in preventing and curing disease; papers on the ferment action of bacteria, in collaboration with Dr. MacFadyen; an account of an experiment illustrating the clumping of bacilli and the formation of rouleaux by blood corpuscles, with a very doubtful explanation of the phenomena; a partially successful attempt by the author and Mr. Rhodes to isolate a glycolytic enzyme from muscle; and an address on the medical treatment of disease, bring the volume to an end.

There is no doubt that the papers in this book contain much that is useful, and many practical hints that may be

of service to the practitioner. Nevertheless, we question whether their republication in a collected form will add to Sir Lauder Brunton's already high reputation. It seems to us that the general scientific level is far below what we might have expected from the author. Many of the papers are quite out of date, and there is a great deal of very questionable physiology and pathology to be found throughout the book. Moreover, some of the articles are written in a semi-facetious style, which when applied to scientific or medical subjects is separated by a very narrow line, indeed, from bad taste.

The pages are not altogether free from typographical errors, but the bringing out of the work is good, and there is an excellent index.

The Earth in Relation to the Preservation and Destruction of Contagia: being the Milroy Lectures delivered at the Royal College of Physicians in 1899, together with other Papers on Sanitation. By GEORGE VIVIAN POORE, M.D. (Lond.), F.R.C.P., Professor of the Principles and Practice of Medicine, University College, London, Physician to University College Hospital, &c. With 13 Illustrations. London: Longmans, Green & Co. 1902. Crown 8vo. Pp. xii + 258.

DR. VIVIAN POORE'S established reputation as a writer and an authority upon matters related to sanitation disarms any hostile criticism of his latest contribution to the literature of Preventive Medicine.

Just one half of the volume before us consists of the Milroy Lectures delivered before the Royal College of Physicians of London in the year 1899. In them the author deals methodically with the various diseases which have been found, or which are alleged to have been found, in association with vegetable humus or "earth." His conclusions are that the application of organic refuse to the land, provided it be done with proper attention to detail, is not only not attended by danger to the public health—tillage and cropping being the surest methods of destroying contagia—but is our only permanent source of wealth.

In these lectures much valuable information will be found by the reader regarding the ætiology of such diseases as anthrax, diarrhœa, cholera, Malta fever, plague, diphtheria, malaria, Blackwater fever, tsetse fly disease, "louping ill" (a disease of sheep common in the North of England and in Scotland), Texas fever, African horse-disease (œdema mycosis), and enteric fever. In connection with the last-named disease, Dr. Poore refers (in Chapter XII.) to sanitation in Holland, where enteric fever is by no means rife or fatal, although the low-lying nature of the country and the stagnation of water resulting therefrom would seem to invite the disease. Scrupulous cleanliness, the universal adoption of the pail-system for the removal of fæcal matter, and the cautious manuring of the soil therewith have had the happiest results in protecting the public health, increasing the fertility of the soil, and enriching a country which is so largely dependent for its wealth on its agricultural produce.

The second part of the book opens, in Chapter XV., with an able address, in which Dr. Poore introduced a discussion on the subject of the Prevention of Enteric Fever at the Royal Medical and Chirurgical Society of London on November 23, 1898. His "text" was the pollution of public water-supplies at the source, in the course, and at the periphery. In this and the two following chapters the author gives the particulars of 46 outbreaks of enteric fever arising from the contamination of public water-supplies, such contamination having in most cases arisen from the neglect of precautions dealt with in the earlier chapters.

Chapter XVIII. is devoted to the connection of enteric fever with overcrowding.

Chapter XIX. deals with the sanitation of Camps, and the part which is possibly played by "flies" in the conveyance of infection.

Chapter XX. gives the latest methods adopted by the author for insuring the wholesome sanitation of cottages in country districts. It deals with the disposal of slop-water by means of "filtration gutters;" the proper construction of rain-water tanks, and the best pattern for earth closets. This chapter is fully illustrated, and will be found a sufficient guide for those who wish to put the author's teaching into practice.

Chapter XXI. deals with the burning question of the connection of disease with milk-supply, and tends to enforce the necessity of caution in the application of bacteriological facts when unsupported by epidemiological experience.

The last chapter draws attention to the ever-increasing difficulty experienced in towns in obtaining really fresh food, a difficulty which, in part at least, is due, the author thinks, to our neglect to apply organic refuse to a well-tilled humus.

From the foregoing analysis it will be seen that Dr. Poore gives us in this volume a very comprehensive survey of the relations between the soil and disease.

Neurological Technique. By IRVING HARDESTY, Ph.D.; Instructor in Anatomy, the University of California; formerly Assistant in Neurology, the University of Chicago. Published by the University of Chicago Press, and also by William Wesley and Son, London.

THIS book, as stated on the title-page, comprises an account of some special histological methods employed for the study of the nervous system. In all some twenty of the best methods are classified and described in a concise and useful manner. We are told that, like most books having a similar aim, it has grown out of attempts to meet difficulties arising in the author's own laboratory, and we may add that it promises to fulfil its aim in a very satisfactory manner. But there are also numerous workers in this branch of science, outside the author's laboratory, who cannot fail to appreciate the convenience of having the details of the various methods placed so clearly, and within such a small compass, before them.

We believe the volume will appeal in a very special degree to superintendents and assistants in asylums who are imbued with a desire to advance the knowledge of their subject, and who have not always the advantages of laboratories or of special members of the staff devoted exclusively to such work in connection with their institutions. To all such, as well as to others, who are making a study of the nervous system, the book can be strongly recommended as a ready means of

reference for obtaining the details of the methods they are likely to employ.

It is, perhaps, to be regretted that no mention is made of the original Weigert's method, nor of its more recent modification known as the new Weigert. Many consider that the results obtained by the latter are better than those yielded by the Weigert-Pal process. No account either is given of the Cox-Golgi process of impregnation with perchloride of mercury, but this can hardly be considered a serious drawback. The method is in reality much inferior to the "rapid" Golgi process. Another method that might usefully have found mention in the book is the Kopsch modification of the Golgi process.

Venereal Diseases: a Manual for Students and Practitioners. By JAMES R. HAYDEN, M.D.; Chief Clinic and Instructor in Venereal and Genito-Urinary Diseases at the College of Physicians and Surgeons (Columbia University), New York; Assisting Genito-Urinary Surgeon to Bellevue Hospital. London: Henry Kimpton. 1902. 8vo. Pp. 301.

THE third and revised edition of this little volume, like its predecessors, is designed for the use of students as well as practitioners. In it the author has endeavoured to give, in a clear and compact form, a practical working knowledge of gonorrhœa, stricture, chancroid, and syphilis. New sections on vegetations and herpes progenitalis and some new illustrations have been added. The first part of the work is a very comprehensive treatise upon gonorrhœa and the treatment of its complications, more particularly stricture of the urethra and the surgical treatment of this condition.

The author states that throughout the work he uses the terms gonorrhœa and urethritis as synonymous. We take exception to this as misleading to students and calculated to lead to an erroneous conclusion that all urethritis is of gonorrhœal origin.

In his section on herpes progenitalis he altogether overlooks one of the most remarkable peculiarities of this affection: its liability to recur at the site of former chancres—a fact noted by Mr. Jonathan Hutchinson, and one of great practical

importance, as it is invariably thought by the patient to be some new development of syphilis.

In the section on vegetations he says—"By some authors these new growths are incorrectly spoken of as 'venereal' warts, a misnomer which should never be employed when speaking of them;" he attributes their origin to "uncleanliness, heat, moisture, and friction, and not to venereal disease or contact." Whatever their primary origin may be, they unquestionably constitute a phase of venereal disease which in ninety-nine cases out of a hundred is contracted by impure sexual intercourse with a person affected with "venereal warts." Not only is this the case, but we have certain proof that they are transmitted from one person to another by contact with media such as bed-bottles, syringes, &c. Too much care, therefore, cannot be taken to guard against the spread of this disease from one patient to another in hospital by contact with utensils.

The illustrations mainly consist of pictures of common surgical instruments, which can be found in the catalogue of any surgical instrument maker, and an illustration of a paraphimosis, and a penis with "venereal wart" upon it, and some diagrams of the urethra and bladder illustrating the method of passing a sound into that viscus.

The section treating of syphilis is an epitome of much of what has been written over and over again by numerous syphilographers, and is as complete as could fairly be expected in a treatise of only about 100 pages.

Forensic Medicine and Toxicology. By J. DIXON MANN, M.D., F.R.C.P.; Professor of Forensic Medicine and Toxicology in Owens College, Manchester; Examiner in Forensic Medicine in the University of London and in the Victoria University; Physician to the Salford Royal Hospital. Third Edition, revised and enlarged. London: C. Griffin & Co. 1902. Pp. 692.

IT is with much pleasure that we welcome the third edition of Professor Dixon Mann's work, and we heartily congratulate its author on its success—a success which has been as marked as it was well deserved.

This third edition has been thoroughly revised, and in the section relating to Toxicology several new poisons have been included. The result is that the work has been thoroughly brought up-to-date, and represents the present state of our knowledge of forensic medicine and toxicology in a most satisfactory and complete manner.

Further study of this work has only served to confirm the opinion we expressed when reviewing the second edition—that Professor Mann's work is the best book of its class in the English language.

Diseases of the Stomach: their Special Pathology, Diagnosis, and Treatment; with Sections on Anatomy, Physiology, Chemical and Microscopical Examination of Stomach Contents, Dietetics, Surgery of the Stomach, &c. By JOHN C. HEMMETER, M.D.; Philos. D.; Professor in the Medical Department of the University of Maryland, Baltimore; Consultant to the University Hospital, &c. With many original Illustrations. Second enlarged and revised Edition. London: H. Kimpton. 1901. Pp. 898.

THIS is a remarkable volume, proving, as it does, what great advances have been made within the past few years in our knowledge of stomach diseases, showing what methods, especially of diagnosis, are employed by specialists which to many practitioners are things undreamed of, and demonstrating how much more rational and scientific is the classification of stomach diseases than it was until recently. Professor Hemmeter is a well-known specialist on diseases of the digestive tract (our readers will remember that he was summoned to attend the late President M'Kinley on his death-bed); he has made himself well acquainted with the literature of his subject, and the work before us is the product of large experience and extensive study.

It is divided into three parts. The first of these treats of the anatomy and physiology of the stomach, and of the methods of diagnosis. Professor Hemmeter has done a good deal of original work in investigating the functions of the stomach; his intragastric bags, whereby he obtains a record of the size and movements of the stomach, and his method

of obtaining intestinal contents are worthy of study. There is a very interesting chapter on the histology of fragments of gastric mucosa sometimes found in the water which has been used for washing out the stomach; several sections of these fragments show with wonderful clearness the condition of the mucosa in normal and pathological conditions. The chemical part of the subject is very fully discussed.

Part II. relates to the therapy and materia medica of stomach diseases. The dietaries suitable in various diseases and the subject of rectal alimentation are very fully discussed; also the indications for surgical interference, and the value and mode of administration of various drugs. With regard to the surgical removal of tumours the author points out that when fairly certain signs of a tumour are present—viz., distinct signs of pyloric narrowing, with emesis, dilatation, and palpable tumour—the most suitable time for operation is already passed. He himself always urges operation when the following three conditions are persistently present:—(1) Dilatation associated with cachexia, (2) absence of HCl in the stomach contents, and (3) excess of lactic acid.

The third section is entitled "The Gastric Clinic," and contains a very full and excellent account of stomach disease, not only of those which are well-known and fairly common, but also of various unusual conditions, such as syphilis of the stomach, benign tumours, achylia gastrica, hyperperistalsis.

The whole forms a valuable addition to the literature of stomach diseases, and suitably represents the position of the most advanced school of medicine.

Nursing—General, Medical, and Surgical, with Appendix on Sick-room Cookery. By WILFRED J. HADLEY, M.D., F.R.C.P., F.R.C.S.; Physician and Pathologist to the London Hospital; Lecturer to Nurses at the London Hospital Nursing School; Assistant Physician to the Chest Hospital, Victoria Park. London: J. & A. Churchill. 1902.

THIS is an excellent guide for the probationer nurse, the teaching being elementary, and giving in the fullest detail

the service required from an intelligent nurse from the day she enters hospital, as a raw recruit, until she leaves it as a certificated nurse—and afterwards. The tone throughout is good, and leads to the thoughtful estimation of a nurse's province, the relief and comfort of her patient, while skilfully carrying out the doctor's treatment. The price (3s. 6d.) places it within the reach of all, and its size will make it a welcome and unobtrusive travelling companion—useful to a nurse at any stage of her career.

Essentials of Obstetrics. By CHARLES JEWETT, A.M., M.D., Sc.D.; Professor of Obstetrics and Gynæcology in the Long Island College Hospital and Obstetrician and Gynæcologist to the Hospital, &c., &c.; assisted by HAROLD F. JEWETT, M.D. Second Edition. Pp. vi. and 386, illustrated by 80 woodcuts and 5 coloured plates. London: Henry Kimpton. 1902.

THE present edition of Professor Jewett's book represents a complete revision of the previous edition. A considerable part of the work has been re-written, and additional matter has been added. It is a clearly written and succinct account of the essentials of obstetrics. If it errs in any direction, it is perhaps in a tendency to describe too many different methods of treating any given condition, without sufficiently specifying what, in the authors' opinion, is the most suitable method to adopt. Such a procedure is apt to produce a confusing effect on the minds of students, for whom the book is primarily intended.

We note that in eclamptic fits a cork or a folded napkin should be placed between the patient's teeth to prevent the tongue from being bitten. Surely, the suggestion of the use of a cork for such a purpose is made through inadvertence. A worse form of extemporised gag could hardly be described, inasmuch as the violent closure of the jaws in such cases would certainly lead to the biting off of small pieces, which would then be dangerously liable to be inspired.

The directions given for the administration of a vaginal or uterine douche are admirable—"asepsis should be as elaborate as for a capital operation."

The book affords a pleasant change from many similar American works, in that it is written in English, and that there is an entire absence of the fashionable hybrid terms, with which so many of the works of our transatlantic *confrères* are disfigured, and which are as unnecessary as they are etymologically incorrect. It constitutes a valuable introduction to Professor Jewett's larger work.

A Short Practice of Midwifery for Nurses, Embodying the Treatment Adopted in the Rotunda Hospital, Dublin. By HENRY JELLETT, B.A., M.D., B.Ch., B.A.O. (Dublin University), F.R.C.P.I., L.M.; Ex-Assistant Master, Rotunda Hospital; University Examiner in Midwifery and Gynæcology, Dublin University; Additional Examiner in Midwifery, Royal College of Physicians, Ireland. With 67 Illustrations and an Appendix. London: J. & A. Churchill. 1901.

THE abridgment of Dr. Jellett's "Short Practice of Midwifery," bringing it into form as a nurse's text-book, will increase its popularity, although the work itself has already been placed on the bookshelves of many nursing institutions where its practical value is much appreciated. The rules and teaching followed in our justly-famed Rotunda Hospital, thus laid before them, must prove of great benefit both to the student midwife and to the trained hospital nurse, who, without passing the L. O. S., may be called upon to give assistance in an emergency.

Essentials of Gynæcology arranged in the form of Questions and Answers, prepared especially for Students of Medicine. By E. B. CRAGIN, M.D.; Professor of Obstetrics, College of Physicians and Surgeons, New York, &c., &c. Fifth Edition, thoroughly revised by FRANK C. MATHEWS, M.D.; Assistant Surgeon and Pathologist, St. Mary's Free Hospital for Children, &c. Pp. 207, with 57 Illustrations. London: Henry Kimpton. 1901.

THIS little work is not intended to be used for the thorough study of gynæcology. Rather, as the author confesses, it

is meant to furnish a summary of the results of extensive reading. It is a work which, in our opinion, has but a very limited sphere of usefulness. If it is adopted by students as a substitute for a systematic work on gynæcology, it is a source of harm rather than of profit. If, however, it is used as a means by which students can coach and examine one another, it may be of value. The fact that it has reached its fifth edition shows that it must be appreciated by a considerable number of students. We have no fault to find with the information it contains, as this appears to be practical and modern.

Handbook of Obstetric Nursing. By FRANCIS W. N. HAULTAIN, M.D., F.R.C.P., Edin.; Lecturer on Midwifery and Diseases of Women, School of Medicine, Edinburgh, &c., &c.; and JAMES HAIG FERGUSON, M.D., F.R.C.P., Edin.; M.R.C.S., Eng.; Lecturer on Midwifery and Diseases of Women, School of Medicine, Edinburgh, &c., &c. Fourth Edition, revised and enlarged. Pp. xv. and 267, with frontispiece and 37 engravings. Edinburgh and London: Young J. Pentland. 1902.

THIS excellent work of Drs. Haultain and Ferguson is so well known that it is necessary to do but little more than notice the appearance of a fourth edition. It has been subjected to a thorough revision, as is clearly seen in every page. A valuable feature is an appendix containing the memorandum by the British Medical Association and the regulations proposed for adoption by the Obstetrical Nurses Board—regulations which we trust will be studied and utilised by the Central Midwives Board, which will be probably called into existence before this review is published.

The illustrations are, as a rule, good, save the frontispiece, which is an excellent example of the standard incorrect relations of the pelvic bones and the gluteal region. It is a pity that this should be so, but the authors err in good company.

We can strongly recommend this little work, and predict that it will run through many future editions.

PART III.

SPECIAL REPORTS.

RHINOLOGY AND LARYNGOLOGY.

By S. Horace Law, M.D., F.R.C.S.I.; Throat Surgeon to the Adelaide Hospital, and Surgeon to the Dublin Throat and Ear Hospital.

Rhinology in 1901.

Rhinology, as one of the youngest branches of medical science, should be subject to greater changes than those portions in which time has allowed the approved methods to become perfected and the worthless ones to be abandoned. Nevertheless, to the lasting honour of the great pioneers in rhinological surgery, it must be said that their principles were so accurate and in such perfect agreement with the well-known general surgical ones that there has been little alteration. Improvements in detail have been made, and many later authorities have overshot the mark. As an instance of this may be cited the operation for the complete removal of the inferior turbinated bodies. It was undoubtedly an easy way of making the nose patent, but what was to carry on the functions of the parts removed? Another heroic operation was that devised by Jansen for the complete obliteration of the antrum of Highmore, by removal of the anterior wall and sinking in of the cheek to fill up the cavity. This was never adopted by the profession as a whole, and the majority preferred to stop after enough of the anterior wall had been removed to enable the operator to see into the cavity, explore it with his finger, and convince himself that there was or was not any dead bone. This is usually called the canine fossa operation. Since that operation, a modification of it has been proposed, which has met with success in some hands—namely, the removal of a portion of the lateral wall of the nose beneath the inferior turbinal, and carrying out the drainage from

there: this is carried out by first performing the canine fossa operation.

The question of operative procedures on the frontal and ethmoidal sinuses, by opening them up from outside, is still debatable ground, some advocating its general adoption, others its adoption only in rare cases of bony necrosis. We must hope that the discussion on this subject at the Annual Meeting of the British Medical Association this year will put us in possession of a series of good cases, and help in the formation of a definite plan for the treatment of these cases.

Some good anatomical work has been produced, and mention may be made of the paper by Professor Onodi, of Budapest, on the relation between the antrum of Highmore and the anterior ethmoidal cells and sphenoidal sinus, which is to be found in the *Archiv für Laryngologie*, Band XI., Heft III.

A great deal has been written, especially in America, on the use of adrenalin in nasal operations, some being very enthusiastic in its favour, others using it but recognising that secondary hæmorrhage must be provided for. There can be no question that it renders the field of operation practically bloodless, and helps the action of cocaïn in contracting and rendering the tissues anæsthetic; but also it must be admitted that in the operations where non-cauterising instruments are used, subsequent bleeding is more likely to take place.

It is recommended for hay fever, but sufficient experience has not yet been gained for one to say whether it will prove reliable in that troublesome affection or not.

Laryngology in 1901.

The advances made during the year in laryngology are not of a startling nature. Evidence of great value on several disputed points has been accumulating, and steady progress, rather than startling innovations, has been the order of the day. The wonderful advances made in former days when the laryngoscope was first brought into general use and cocaïn introduced can hardly be our lot to-day—we must rather look to the perfection of known methods than the introduction of entirely new ones.

Several notable papers and monographs have appeared

dealing with the ever-present and terrible affection of laryngeal tuberculosis. The *vis inertia* of the saying, "You can do nothing for that," is slowly being broken down, and it is now recognised that it is always possible, by suitable treatment, to relieve suffering, and in many cases to ward off the occurrence of this suffering, by steady treatment, directed to keep the throat and ulcers in a healthy condition, and to avoid the septic infection, which occurring on the top of the tubercular lesions leads on to perichondritis and fixation of the arytenoid cartilages. Again, in those cases where the general condition permits of more energetic measures than in the class of case mentioned above, an actual improvement and healing may be reached. This is, of course, possible only where the general condition—more especially that of the lungs—so improves that there is hope of permanent benefit; as no treatment, however efficient locally, is of avail which is so severe that the general condition is prejudiced thereby, and while, perhaps, locally the patient is improved the general condition is weaker. To illustrate this, a saying of Hajek, of Vienna, may be quoted: "If as a result of the use of cocaïn for operative purposes in the larynx of a tubercular patient the appetite fails, cease operating; more harm than good will result."

Frendenthal, of New York, writing in the *Archiv für Laryngologie*, Band XI., Heft I., has had hopeful results from the steady use of the following formulary, beginning with 1 per cent. menthol and gradually increasing it:—

Menthol	1·00–15·0
Ol. Amygdal. dulc.	30·0
Vitelli ovorum	25·0
Orthoform	12·0
Aquæ dist. ad.	100·0

Fiat emulsio.

He usually commences his treatment by curetting the ulcers.

Lake, of London, in a monograph published by Rebman, practically agrees with what has been said above, and urges the importance of submitting cases to a proper course of local treatment.

Veis, of Frankfürt-a.-M., in the *Archiv für Laryngologie*, Band XII., Heft III., gives some cases of pharyngeal tuber-

culosis which proved amenable to treatment. In some of his cases no lung trouble could be discovered. He depended principally on trichloractic acid as a cauterising agent, and noted particularly that the great pain on deglutition was much lessened by the application.

A paper of great interest was read by Dr. John Macintyre before the meeting of the British Laryngological, Rhinological and Otological Society, dealing with the subject of the treatment of various forms of ulceration—lupoid, cancerous, &c.—by high intensity electric currents, and various forms of brush discharge from Crooke's tubes and other forms of electrical apparatus. At the time of writing the paper, the author's experiments were not concluded, but his results gave great promise, and many of the cases treated had derived great benefit. There were obvious difficulties in adapting this class of treatment to the interior of the upper air passages, due to sparking, &c., and the fact that such a reaction as often occurs on the skin in the form of a dermatitis following X-rays must at all costs be avoided, as, if it occurred in the larynx, it might well prove fatal through sudden œdema. Nevertheless, the author deserves our highest congratulations for what he has already achieved. The paper is fully reported in the "Transactions" of the Society mentioned above for 1901.

Before leaving the electrical section a series of experiments may be mentioned which have been carried out on the cadaver for the removal of magnetic bodies by means of a Haab's electric magnet. These have been on the whole successful, though as a rule a tracheotomy was necessary, but the experimenter hopes by an improvement in the form of the magnet to eventually succeed in the extraction upwards through the glottis without operative interference.

Many reports have been published on the extended use of the active principal of the suprarenal gland, now that we have it in a handy form. Most authorities agree that adrenalin is a great help in throat work, more especially in operative work, though up to the present its worth as a therapeutic agent has not been fully established.

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—LOMBE ATTHILL, M.D., F.R.C.P.I.
General Secretary—JOHN B. STORY, M.B., F.R.C.S.I.

SECTION OF SURGERY.

President—THOMAS MYLES, M.D., P.R.C.S.I.
Sectional Secretary—JOHN LENTAIGNE, F.R.C.S.I.

Friday, April 4, 1902.

THE PRESIDENT in the Chair.

Radical Cure of Hernia in Infants.

MR. KENNEDY exhibited the vermiform appendix of a baby five months old, removed from the right inguinal canal during the operation for the radical cure of hernia. Mr. Kennedy also exhibited a patient, five months old, on whom he had performed the radical cure operation for hernia on the right and left inguinal canals, excised the appendix, and performed circumcision.

Perforated Gastric Ulcer.

MR. ALEXANDER BLAYNEY exhibited a girl on whom he had operated two months previously for a perforated gastric ulcer. The operation was performed nineteen hours after the rupture. The opening was found near the lower curvature of the stomach, on the anterior wall, close to the œsophagus. The patient made a good recovery, but a week afterwards the temperature rose, and on opening the wound a large abscess was found under the left wing of the diaphragm. This was drained by an incision

between two of the lower ribs; the original wound was closed, and the patient made a complete though somewhat tedious recovery.

Ligation of the External Iliac Artery for Ilio-femoral Aneurysm and other Tumours.

MR. H. G. CROLY commenced by giving a *résumé* of the anatomy of the artery, especially its relation to its vein on the right side, and the presence of the fibrous septum that separates the vessels, and exhibited some beautifully-coloured illustrations painted from nature by Dr. Paul Carton. His incision was planned to allow of the artery being tied at least one inch and a half from the origin of the deep epigastric artery. It commenced on a level with the umbilicus, and curved downwards, outwards, and inwards, ending at a point midway between the symphysis pubis and the anterior superior crest of the ilium. By making the incision superficial he avoided bleeding. The ligature used was ox-peritoneum or gold-beater's skin, as recommended by Lord Lister, and described by Messrs. Ballance and Edwards. He tied the ligatures in the "stay-knot" of Ballance, which he considers the most secure of ligation knots, and the one least likely to tear the inner coat of the vessel, which should never be allowed to occur. The arterial wall was healthy, and the patient, who was exhibited, made a good recovery from the operation, which was an extra-peritoneal one. A series of beautiful casts and photographs showing the aneurysm before operation, a few days after operation, and when the patient was convalescent, was exhibited.

THE PRESIDENT had listened with much pleasure to Mr. Croly's very interesting paper—interesting from both its anatomical and its clinical aspects. He quite agreed with Mr. Croly in selecting a site some distance from the deep epigastric artery for ligation; but he was not so sure that the secondary hæmorrhages which were so common in the past were due to the site of ligation. The *locus in quo* did not account for everything. The good result was no doubt partly due to the better site of ligation chosen by Mr. Croly; but there was something more—to-day we had aseptic methods—aseptic ligatures, aseptic handling of the wound. He would like to hear from Mr. Croly how he prepared the ligatures; also if he found the pulse of the posterior tibial in the limb operated on soon after the ligation. When we think of the care taken by surgeons to-day to ensure aseptic conditions, and recall the methods

of the past, we can only ascribe the successes of the older surgeons to the providential mercy of God.

Mr. L. H. Ormsby felt that they should all be very much obliged to Mr. Croly, one of their senior surgeons, for taking the trouble of coming there and describing to them his operation. He had never had an opportunity of tying the external or common iliac artery; but if he should be called on to perform such an operation he would adopt Mr. Croly's methods and be well satisfied if he obtained equally good results.

Mr. Lane Joynt by the reference to the old surgeons and their methods was reminded of a painting he saw not long since on the wall of a house in Pompeii, which represented a surgeon in the act of cutting down on the femoral artery in Hunter's canal. The line of incision was that followed by Hunter.

Mr. Lentaigne thought that perhaps the older surgeons were too much blamed. He looked on secondary hæmorrhages as the result of sepsis—sepsis by silk ligatures and ligatures of other absorbent material, which retain septic matter in close union with the arterial wall, so that it soon becomes infected. All this was carefully avoided to-day with the excellent and brilliant results which they had just heard from Mr. Croly.

Mr. Croly, in reply, stated that he prepared his ligatures by leaving them for twenty-four hours in ether and then placing them in a solution of carbolic acid in water, of a one in twenty strength. He looked upon the fear of wounding the peritoneum as the reason the older surgeons tied the external iliac so near its distal end. This fear paralysed their action in cases of wounds of the deep epigastric and internal iliac arteries—they looked on wounds of the peritoneum as necessarily fatal, and rather than open it they left patients to die of internal hæmorrhage. He (Mr. Croly) did not divide the muscular tissue by his incision; on coming down to the muscle tissue he pushed the transversalis fibres aside with his fingers and readily exposed the artery. He failed to find the posterior tibial pulse either after the operation or since, though, as was seen, the man makes no complaint of any want of circulation in the limb.

SECTION OF MEDICINE.

President—Sir Christopher J. Nixon, M.D., P.R.C.P.I.
Sectional Secretary—R. Travers Smith, M.D.

Friday, April 11, 1902.

The President in the Chair.

Sporadic Cretinism.

Dr. J. B. Coleman exhibited a case of sporadic cretinism in a child, five years of age. The case was particularly well-marked, all the classic symptoms of the disease being present.

Perforated Gastric Ulcer.

Mr. R. F. Tobin read a paper on "Some Medical Aspects of Four Consecutive Cases of Perforated Gastric Ulcer" successfully operated on, all of which were together in St. Vincent's Hospital at the opening of the present session. Three of the patients were young domestic servants. In all the cases the position of the ulcer was the same—viz., an inch or two in front of the œsophageal opening. This, he said, was the most common spot for the surgeon to find a perforation. Why was it so? He believed that perforation was the penalty the overworked anæmic class that furnished most cases paid for being obliged to carry themselves upright from early rising to late bed-time. The liver in such patients is not braced up owing to the laxity of tissue, and the fact that the patients are on their legs all day long. The stomach, owing to its fixity to the diaphragm, is being continually drawn through a long range of movement in the breathing that is induced by journeys up and down stairs. Now, given congestion of the area under consideration, that which extends from the œsophagus under the liver, it is easy to understand how the pressure and movement referred would in anæmic subjects cause congestion to pass to ulceration, and ulceration to sloughing; also how rest in the recumbent position is such a healing force in such cases. He referred to the disastrous effects of movement in cases of perforation and laid down the rule that the surgeon should be called to the patient, and that no patient should be moved till the opening had been closed. The convenience of operating in hospital did not cover the loss from transportation. He narrated a case on which he operated successfully with the rudest appliances. Shock should not prevent one operating at once. It is not mere nervous shock where nothing harmful is going on while

one waits for the patient to come round. On the contrary, changes are going on that may lead to thrombosis of the mesenteric vessels and render operation useless. As regards prevention, he pointed out that we are constantly advising sufferers of the servant class to rest in the intervals of work. at the same time knowing that in most houses, short of going to bed, there is no means for them to properly carry out the suggestion offered.

DR. REDMOND thought the great difficulty in such cases was the diagnosis of perforation; there may be little or no shock. In one of his cases he found the patient sitting in bed leaning forward, supported by two friends, and crying out with pain. She had been in excellent health all day and had eaten heartily of mutton at dinner. There was no diminution of the area of liver dulness. He recommended operation; a perforation at the cardiac extremity of the stomach was found and sutured, and the patient made a good recovery.

MR. H. G. CROLY thought they should all be very grateful to Mr. Tobin for bringing these cases forward, and particularly for his sound advice to them to bring the surgeon to the patient. Gastric ulcer cases do not bear carriage. To convey such a case any distance in a cab, jolting alone and having the stomach contents extravasated into the peritoneum was to court death. On the other hand, no cases are so readily dealt with in their own homes. All the surgeon requires is a knife, a forceps, a needle, and a bit of thread. If necessary, he would prefer to operate first and convey the patient to hospital afterwards. His advice in all these cases, even in cases where the diagnosis was not absolute, was to operate without delay; a laparotomy will ensure an accurate diagnosis, and, if an ulcer is not present, the incision in no way increases the patient's risk. Mr. Tobin's paper is full of sound advice and a creditable record of good surgery.

DR. KENNEDY said that he found the patient he sent to Mr. Tobin rolling about in bed as if in hysterics. He was with her an hour after perforation, and did not find the shock as severe as the text-books led him to expect. The abdomen was not distended; the abdominal muscles were rigid; there was no vomiting; one hour later she looked as if dying. Three months before seeing this case he was called to see a similar case. Though forty hours had elapsed from the perforation there was no vomiting; an operation was performed, and the patient died in a few hours. This girl had been treated for gastric ulcer in St. Vincent's Hospital, from which she had been discharged as well. At the

time of the perforation she was at business in a draper's shop, and continued working for an hour after the accident. He recommends home operations.

DR. WINTER found no diminution of liver dulness in a case which he had observed; there was a complete absence of shock, and no vomiting. Removing the patient from her home to hospital occupied three-quarters of an hour. He would like to hear from Mr. Tobin the after-history of his cases, for there was an idea that such cases did not always do well.

DR. JAMES LITTLE had seen many cases which had all the symptoms of perforation recover without operation. In one case, when called in consultation, he found what might be called a typical case of perforation with the peritonitis of extravasation, yet that patient recovered, and for years past she hunts regularly.

DR. FINNY looked on the diagnosis of the perforation as the real difficulty in these cases. One of his patients who had all the typical symptoms of perforation—vomiting, tympany, pain, and so forth—was operated on three hours after the outset of the attack, and all the viscera were found to be healthy; there was no ulcer whatever. The abdomen was stitched up and the patient made a good recovery. He has seen a good many operations for perforating ulcer of the stomach, and he cannot agree that it is so easy a performance as some think, particularly if the perforation occurs on the posterior wall—such an operation could not be successfully carried out with lamp or candle light. Absence of liver dulness is not an essential symptom in the early stage of the disease.

DR. O'CARROLL was of opinion that the sooner the operation is performed after the perforation the better. Some few cases may recover under medical treatment, but he thinks the safer practice is operation. The onset of shock is the call for laparotomy; never postpone interference on account of shock. The gradual and progressive increase of the pulse rate is a valuable sign of perforation in these cases. All the fluid found in the peritoneum should not be looked on as coming from the stomach; the peritoneum itself on the onset of inflammation pours out an abundant secretion. Liver dulness is of little importance as a symptom, and as a rule vomiting occurs more regularly after lesion of other portions of the alimentary canal than of the stomach. Symptoms of perforation are very varied; in one of his cases the patient got the symptoms of perforation and recovered; but she developed a systolic bruit, which extended from the epigastrium along the

aorta. Five or six weeks afterwards she returned to hospital and was operated on. The autopsy revealed the presence of an encysted extravasation from a perforating ulcer on the posterior wall of the stomach, which pressed on the aorta.

DR. PARSONS, whilst warmly congratulating Mr. Tobin on his promptness and successful operations, felt that the physician who was called to a case of sudden illness and recognised a perforation had a more difficult task than the surgeon who operated, for, after all, the operation is not a very serious one. In cases of doubt he looks on a diagnostic section of the abdomen as a perfectly justifiable operation. He has found the steady increase in the pulse rate a valuable symptom in these cases, and in his experience the area of liver dulness was diminished, if not at first soon afterwards. The escape of gas found on opening the abdomen he considered one of the most marked signs of perforation. He favoured the removal of the patient to hospital, if the hospital is within reasonable distance and the method of conveyance suitable. The advantages of operation in a properly-equipped theatre are enormous. In Dr. Winter's case there was some difficulty in suturing the perforation owing to the sodden condition of the tissues, and eleven days afterwards the patient died of pneumonia. He cannot agree with the suggestion that Trendelenburg's position is a suitable one for the patient suffering from perforation with extravasation; it tends to throw the extravasated material on the lymphatics of the diaphragm and to promote septic posioning by their absorption.

THE PRESIDENT, before calling on Mr. Tobin to reply to the criticism of his interesting and suggestive paper, would just like to say a few words on those cases that leave hospital as cured, as he finds that they are the cases which come back for operation. When being discharged from hospital they have none of the signs or symptoms of the disease, they are practically cured as far as can be made out, yet it is this class that furnishes the surgeon with material. The marvel is, in many of these cases, how they survive the digestion of their food, and that perforation is not more common. A patient came under his care who had lived some years in New York; during that time he had been on several occasions an inmate of the Bellevue Hospital, where he was treated for gastric ulcer. He came to the Mater Hospital very ill and emaciated, vomiting and in pain. As food would not rest on his stomach, he was fed by nutritive enemata and suppositories; after a time he got liquid food. He now craved for a mutton

chop and said that it agreed with him in the Bellevue Hospital. He got the chop, eat it with a relish, and the diet was continued. He left the hospital, but soon afterwards came back and died. An ulcer was found near the pylorus, as large as a finger-ring. Why ulcers do not perforate the gastric walls more frequently may be explained by the fact that the majority of them are chronic and form adhesions to surrounding tissues ; when perforation does occur its site is usually at the cardiac end of the viscus, where the ulcers are acute and speedily perforate the thin-walled œsophageal extremity. Gastric ulcers tell us how necessary it is to give patients full and important directions as to their dietary. Of the symptoms discussed, he is of opinion that diminished hepatic dulness is more commonly met with in general peritonitis than in perforation of the stomach.

MR. TOBIN, in reply, stated that the object of his paper was to try and induce physicians to bring the surgeon to the patient, not the patient to the surgeon—not to send a case of perforated gastric ulcer to hospital, but to keep it at home and have it operated on there. He looked on the shock as being occasioned by the extravasation, and to be proportioned to the amount of the extravasation. Of course it may be due to something else, but holding the views he does he thinks the conveyance of a patient to hospital, when all the while more and more matter extravasated is forced into the peritoneum, decidedly injurious. Every one of his cases were diagnosticated by the physician in attendance, and he quite agreed that the difficulty in such cases is the diagnosis. He has seen these cases within the past few months and they remain well. The omission of the toilet of the peritoneum was due to the fact that he was addressing the Section of Medicine. In two cases he flushed out the peritoneal cavity with sterilised water, and in one he used a mop of surgical wool on the end of a stick. He looks on the escape of gas on opening the abdomen as a most valuable sign of perforation. An ulcer on the posterior wall of the viscus would, undoubtedly, greatly add to the difficulties, but, happily for us, perforating ulcers are, as a rule, found on the anterior surface. He has operated more than forty hours after perforation had taken place. On admission to hospital there was a diminution of the area of hepatic dulness in every one of the cases, though the symptom was absent in each one when first examined in their own home. He is in favour of keeping and carrying patients in the Trendelenburg position, when circumstances permit of it.

SECTION OF STATE MEDICINE.

President—NINIAN FALKINER, M.D., F.R.C.P.I.
Sectional Secretary—F. C. MARTLEY, M.D., F.R.C.P.I.

Friday, April 25, 1902.

THE PRESIDENT in the Chair.

Case of Lead Poisoning.

THE Hon. Secretary of the Section read a communication from DR. M'VITTIE. The patient, a retired Indian officer, aged fifty-eight, after three months' residence in his new house, began to complain of general indisposition, loss of appetite and muscular weakness; he got worse, and in a month was affected by severe abdominal pains. Two months later he had vomiting and constipation, and he noticed a "fumbleness" of his hands. He was treated for gout, and ordered to Buxton. As he had no teeth the gums showed no lead line. The water supply came from two wells situated above the house, and was conveyed thence in iron pipes which ended in a few feet of leaden pipe to which the tap was attached. Water taken from the tap was found to contain 1·67 grains of lead per gallon, that from the wells was pure, soft, slightly peaty. Since discontinuing the tap water he has become completely well. Of all the household he alone was affected; this was probably due to his age and to his having lived some time both in India and Burma.

SIR C. CAMERON, C.B., considered Dr. M'Vittie's communication of interest from the exceptionally large amount of lead present, greater than is usually found except in the case of acid solutions. The water pipes used in Dublin consist of an alloy of tin, 3·5 per cent., and lead, 96·5 per cent. This has, after years of trial, been found to resist the solvent action of water.

PROFESSOR MCWEENEY said that the case is interesting from many points. We find that a few feet of lead pipe yields to a soft water an unusually high percentage of lead. How could it produce this effect? He is inclined to think that the two metals, the iron and lead, generated electricity, the presence of which produced the solution of the lead. From the clinical history, which says nothing of the patient's urine, he is disposed to think that the patient had some inherent peculiarity of constitution. He (the patient) may have had some chronic kidney disease. An examination of the interior of the lead pipe would throw some light on the subject;

they would, at all events, see if there were any carbonates deposited.

DR. DE LISLE, of New Zealand, said that in New Zealand lead poisoning was practically unknown. He had seen two cases only, and they were painters. He ascribed the immunity to the hardness of the drinking water in their towns. But before he settled in the country, during his life in Sydney, whilst lying ill with typhoid in the General Hospital of that city, he saw many cases, the victims being heavy beer drinkers, and the liquor was contaminated with lead from the leaden pipes of the beer machine. The drunkards of Sydney are beer drinkers; their moderate drinkers take whisky.

THE PRESIDENT reminded the members present of the very interesting meeting of the Section in 1893, when Dr. O'Carroll brought the subject of lead poisoning from hair dyes under notice. Lead, as many of them no doubt knew, was found in water derived from mineral sources. Of this nature was the Pudsey poisoning outbreak that caused so much excitement in the past. He felt sure that not infrequently cases of lead poisoning escaped notice in their early stages, and it is all the more creditable to the physician who diagnosticates such cases in their early stage.

The Infectivity of the Milk of Cows which React to the Tuberculin Test, but are not Clinically Tuberculous.

PROFESSOR E. J. MCWEENEY said that ever since the introduction of the tuberculin test he had taken a warm interest in this question. The problem that presented itself to him was, should the milk of cows that react to the tuberculin test be permitted to be sold for human consumption? He commenced his experiments by trying to learn the percentage of milch cows that react to the test. For this purpose he examined a herd of cattle numbering between 80 and 100 animals that were kept under hygienic conditions very much superior to ordinary herds, and of these cattle kept under the most favourable conditions 50 per cent. reacted positively to the tuberculin test. He afterwards, in the South of Ireland, examined a herd of cattle that was not kept under the same favourable conditions, and of these 80 to 90 per cent. reacted to the tuberculin test. To decide that the milk of animals that reacted to the test was unfit for food would be to cut off the milk supply and be impracticable. Some of the animals vigorously reacted to the toxin, the temperature rising from normal to 105°, 106°, and

even to 108°. Strange as it may appear, he found the infection to be inversely proportionate to the extent of the tuberculous lesion, the possible explanation of which might be that the animals which were clinically tuberculous had had their blood immunised by the toxin already in their bodies, and injected tuberculin produced a slight, if any, reaction. In the animals in whom violent reaction took place he found not more than one or two caseous glands, most commonly in the posterior mediastinum. All these statements are based on *post-mortem* experiments, for every animal he experimented on was afterwards killed. Such animals as those that had such encysted little masses of tubercle gave milk in which tubercle bacilli could not be found. He then described a series of experiments he instituted to test the effects of the milk of cows giving a reaction to tuberculin, but not clinically tuberculous. He reminded his hearers that "acid-fastrods" simulate bacilli, and have been mistaken for them. Almost identical experiments, but conducted on a much larger scale, were carried out in Berlin by Perstatay, who fed young animals, calves and pigs, on the milk of tuberculous cows, but in whom the disease was not clinically demonstrable. The calves were fed for two months and the pigs for seven months on the milk, and in not a single instance did tubercle develop. The milk was perfectly innocuous. A very infectious form of the disease was that in which the cow's udder is infected. The least amount of tubercle in the udder makes the milk poisonous. Bang, of Copenhagen, gave a litre of milk extracted from a cow with a tuberculous udder to a pig, and the animal died as if poisoned in a short time. The percentage of infected animals whose udders are tuberculous is calculated to vary from 2 to 4 per cent. In his own experience he has never come across a case of infected udder; there is no difficulty in recognising it, any educated veterinarian should be equal to the task. So far as his experience goes he considers bovine tubercle to be capable of infecting the human being.

THE PRESIDENT would offer one remark in the nature of a criticism: Are the cows in dairy yards submitted to a daily inspection? Is the cow recognised as infected allowed to remain in the byre? If so, he cannot accept the views put forward.

PROFESSOR MCWEENEY said that theoretically the view of the President was correct; but practically the rupture of a tuberculous cyst in the cow was unknown. The yards are inspected at short intervals. In very marked cases, clinically demonstrable, tubercle

bacilli may occur in the milk without the udder being infected. Personal inspection by a skilled veterinarian would be inadequate for the detection of tubercle. No person other than a skilled bacteriologist could detect the presence of bacilli in milk.

Inspection of Dairy Sheds.

SIR C. CAMERON, C.B., in a paper on this subject, expressed the opinion that dairy inspectors should not be satisfied with the sterilisation of the milk; other matters appertaining to the hygiene of the cowsheds and the dairy should be looked after. Inspectors in rural districts are not at all so careful as our citizens; neither are the rural cowsheds and attendants as clean as city sheds and attendants. Milk is liable to infection from typhoid fever and tubercle, the former after it has been yielded, the latter from the health of the animal. He considers that all inspectors of dairies and creameries and sanitary authorities dealing with our milk supply should be under the authority of the Agricultural Department. The conditions under which cattle are kept in the rural districts is very unsatisfactory.

DR. KIRKPATRICK believes that in the direction indicated in the papers there is room for much good work. Hampered by Koch's theory scientists appeared to the public as divided on this sanitary question, and consequently could not hope for lay support. The danger could hardly be overestimated. MacFadyen estimated that 70 per cent. of the cattle were tuberculous, statistics verified by examination after the slaughter of the animals. The dairy yards of the city were well adapted for the growth of bacilli. Cattle whose lungs are infected are a constant source of infection to the others. Pure milk exposed, as it often is, in these dirty byres in wide, open vessels, is readily infected by tuberculosis.

DR. MATSON thought that feeding of the cattle is of importance. He has seen in Canada cattle fed in underground cellers fattened on grain for the English market. Animals so deprived of natural food and fresh air cannot be healthy, and such cows cough and vomit matter which is almost certain to convey tubercle. The precaution of boiling all milk before use should be adopted.

SIR CHARLES CAMERON, C.B., wished to remind the Section that the recent Vice-regal Sanitary Commission declared that the cows in the city dairy yards were much better fed than those in the rural districts. They stated that the Dublin dairy yards were incomparably superior to those in the urban districts; the hygienic

arrangements were better, and the milkers and other attendants much cleaner. The Dublin cows are sent to grass for seven months of the year; their milk contains 14 per cent. of solids as against 12 per cent. in the country. A veterinary surgeon examines their udders regularly during the winter season, and the personal cleanliness of the attendants is ensured by a by-law which makes dirty hands punishable by a fine, and during the last year forty milkers were fined for having their hands dirty.

PROFESSOR MCWEENEY believes that a codification of our sanitary laws is a necessity; as it is, a whole library of legal books is wanted to find out the law on sanitation. They (sanitarians) want one big Act which will include everything. Sterilisation of milk is out of the question—it makes ordinary milk unsightly and unpalatable; spores resist boiling for three hours under a pressure of two atmospheres. Pasteurisation kills typhoid germs at a temperature of 140° F., and 190° F. kills the tubercle bacilli; no creamery should be allowed to vend milk until it has been properly Pasteurised. As for the Dublin dairy yards, he considers them a disgrace to civilisation; they are kept in an intolerably filthy state, and, as for the attendants, he thinks if they had the German sanitary law in force here some 90 per cent. of the milkers would be arrested, and be forcibly washed. The condition of the cows with their flanks caked with fæces and their unwashed udders in city byres, where the fresh milk is allowed to remain in open shallow vessels in which not infrequently fæcal matter floats, is abominable. In Germany the fæcal matter would be washed off the cow, and the milk would not be allowed to remain in the byres to be infected. Cows cough and sneeze and usually swallow some of the sputum, passing the tubercle in the fæces, and of course infecting healthy animals and contaminating the milk. There can be no proper supervision of dairies without a bacteriologist; a veterinarian cannot make an exhaustive microscopic examination of milk or perform the necessary biological experiments; this is the work of a biologist, and can be done by a biologist only.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by Sir J. W. Moore, B.A., M.D., Univ. Dubl.; F.R.C.P.I.; F.R. Met. Soc.; Diplomate in State Medicine and ex-Sch. of Trin. Coll. Dubl.;

Vital Statistics.

For four weeks ending Saturday, June 14, 1902.

IRELAND.

Twenty-two Town Districts.

The average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ending June 14, 1902, in the Dublin registration area and the twenty-one principal provincial urban districts of Ireland was 19·2 per 1,000 of their aggregate population, which, for the purposes of these returns, is estimated at 1,092,322. The deaths registered in each of the four weeks ended Saturday, June 14, and during the whole of that period, in the several districts, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

Towns, &c.	Week ending				Average Rate for 4 weeks	Towns, &c.	Week ending				Average Rate for 4 weeks
	May 24	May 31	June 7	June 14			May 24	May 31	June 7	June 14	
22 Town Districts	20·7	19·4	19·8	19·2	19·8	Lisburn -	18·2	27·3	41·0	31·9	29·6
Armagh -	6·9	13·8	13·8	13·8	12·1	Londonderry	26·9	21·8	20·5	33·3	25·6
Ballymena	9·6	24·0	14·4	24·0	18·0	Lurgan -	17·7	17·7	4·4	26·6	16·6
Belfast -	22·1	20·2	19·0	16·4	19·4	Newry -	20·7	12·4	29·0	8·3	17·6
Clonmel -	15·3	15·3	10·2	0·0	10·2	Newtownards	40·1	17·2	11·4	22·9	22·9
Cork -	21·3	16·5	17·8	16·5	18·0	Portadown -	20·8	5·2	15·6	20·8	15·6
Drogheda -	16·3	4·1	8·2	0·0	7·2	Queenstown	39·7	13·2	0·0	26·4	19·8
Dublin - (Reg. Area)	19·1	22·3	19·8	19·7	20·2	Sligo -	14·4	14·4	43·2	57·6	32·4
Dundalk -	16·0	8·0	23·9	39·9	21·9	Tralee -	53·1	15·9	42·5	31·9	35·8
Galway -	23·3	7·8	7·8	50·5	22·3	Waterford -	9·7	23·4	27·3	7·8	17·1
Kilkenny -	19·9	5·0	9·9	14·9	12·4	Wexford -	18·7	28·0	28·0	23·4	24·5
Limerick -	19·2	8·2	26·0	12·3	16·4						

The deaths (excluding those of persons admitted into public institutions from without the respective districts) from the principal zymotic diseases, registered in the 22 districts during the week ended Saturday, June 14, were equal to an annual rate of 1·9 per 1,000, the rates varying from 0·0 in twelve of the districts to 9·6 in Sligo. Among the 113 deaths from all causes registered in Belfast are one from small-pox, 2 from measles, one from whooping-cough, 3 from diphtheria, 6 from enteric fever, and 4 from diarrhœa. The 24 deaths in Cork include one from measles, one from whooping-cough, and one from diarrhœa.

DUBLIN REGISTRATION AREA.

The Dublin Registration Area now consists of the City of Dublin as extended by the Dublin Corporation Act, 1900, together with the Urban Districts of Rathmines, Pembroke, Blackrock, and Kingstown. The population of the Area, estimated to the middle of 1902, is 379,003, being made up of the following:—City, 293,394; Rathmines, 33,203; Pembroke, 26,025; Blackrock, 8,759; and Kingstown, 17,622.

In the Dublin Registration Area the births registered during the week ended Saturday, June 14, amounted to 192—102 boys and 90 girls; and the deaths to 155—87 males and 68 females.

DEATHS.

The registered deaths represent an annual rate of mortality of 21·3 in every 1,000 of the population. Omitting the deaths (numbering 12) of persons admitted into public institutions from localities outside the Area, the rate was 19·7 per 1,000. During the twenty-four weeks ending with Saturday, June 14, the death-rate averaged 25·6, and was 3·5 below the mean rate for the corresponding portions of the ten years 1892–1901.

The 155 deaths registered in the week ended Saturday, June 14, include 4 deaths from measles, one death from influenza, 3 deaths from whooping-cough, and one death each from enteric fever, *diarrhœa*, diphtheria, and tetanus.

Two deaths were registered as tuberculous phthisis and 24 as *phthisis*. Two deaths were caused by tuberculous meningitis, and 4 by other forms of tuberculous diseases.

Carcinoma was the registered cause of one death, and *malignant disease* (*cancer*) of 7 deaths.

In the total of 17 deaths from diseases of the nervous system

are included 8 deaths from *convulsions* (of the victims one was under one month old, 6 were over one month but under one year, and one death occurred in a person over 5 years of age but under 20 years).

Eighteen deaths were caused by diseases of the heart and blood-vessels; these include 2 deaths from *apoplexy* (*hemiplegia*).

There were 10 deaths from diseases of the respiratory system, including 8 from bronchitis, one from broncho-pneumonia, and 5 from *pneumonia*. The annual rate for the week is 1·2 below the rate per 1,000 for the corresponding period of the past 10 years.

There were 10 deaths from accidental violence.

In 9 instances the cause of death was "uncertified," there having been no medical attendant during the last illness. These cases comprise the deaths of 5 children under one year of age and the deaths of 2 persons aged 60 years and upwards.

Fifty of the persons whose deaths were registered during the week under review were less than 5 years of age (30 being infants under one year, of whom 6 were under one month old), and 33 were aged 60 years and upwards, including 15 persons aged 70 and upwards, of whom 6 were octogenarians.

The Registrar-General points out that the names of causes of death printed above in italics should be avoided whenever possible in Medical Certificates of the Cause of Death.

STATE OF INFECTIOUS DISEASE IN DUBLIN.

(1.) Cases of Infectious Diseases Notified to the Public Health Committee of the Corporation.

Sir Charles A. Cameron, C.B., Medical Superintendent Officer of Health for the City of Dublin, has furnished information regarding the number of cases of infectious diseases in the City of Dublin notified under "The Infectious Diseases (Notification) Act, 1889," as follows:—

Week ending	May	24,	1902, ..	.. 81 cases.
„	„	31,	„ ..	.. 154 cases.
„	June	7,	„ ..	.. 148 cases.
„	„	14,	„ ..	.. 169 cases.

Of the 169 cases notified in the week ended June 14, 15 were erysipelas, 9 enteric fever, 5 scarlatina, 3 diphtheria, 123 measles, one rubella, one "fever" and one "undefined fever," 11 chicken-pox.

(2.) CASES OF INFECTIOUS DISEASE IN RATHMINES URBAN DISTRICT.

Mr. Fawcett, Executive Sanitary Officer for Rathmines Urban Council, has furnished information regarding the number of cases of infectious diseases in the Urban District of Rathmines notified under "The Infectious Diseases (Notification) Act, 1889," as follows :—

Week ending	May	24,	1902, ...	5 cases.
,,	,,	31,	,, ...	4 cases.
,,	June	7,	,, ...	2 cases.
,,	,,	14,	,, ...	No cases.

(3.) CASES OF INFECTIOUS DISEASE IN PEMBROKE URBAN DISTRICT.

Mr. Manly, Executive Sanitary Officer for Pembroke Urban Council, has furnished information regarding the number of cases of infectious disease in the Urban District of Pembroke notified under "The Infectious Diseases (Notification) Act, 1889," as follows :—

Week ending	May	24,	1902	10 cases.
,,	,,	31,	,, ...	18 cases.
,,	June	7,	,, ...	22 cases.
,,	,,	14,	,, ...	23 cases.

Of the 23 cases notified in the last week, 17 were measles, 5 whooping-cough, and one was scarlet fever.

(4.) CASES OF INFECTIOUS DISEASES UNDER TREATMENT IN DUBLIN HOSPITALS.

One case of small-pox remained under treatment at the close of the week ended June 14.

Fifty-three cases of measles were admitted to hospital in the same week, 20 were discharged, there was one death, and 149 cases remained under treatment at the close of the week.

Five cases of enteric fever were admitted to hospital, 7 cases were discharged, and 25 cases remained under treatment at the close of the week.

Nine cases of scarlatina were admitted to hospital, 18 cases were discharged, and 76 cases remained under treatment at the close of the week.

Two cases of diphtheria were admitted to hospital, and 18 cases remained under treatment at the close of the week.

In addition to the above-named diseases, 3 cases of pneumonia were admitted to hospital, there was one death, 11 patients were

discharged, and 19 cases remained under treatment at the end of the week.

STATE OF INFECTIOUS DISEASE IN THE CITY OF BELFAST.

Dr. Whitaker, Medical Superintendent Officer of Health, has furnished information regarding the number of cases of infectious diseases in the City of Belfast notified under "The Infectious Diseases (Notification) Act, 1889," as follows :—

Week ending May	24,	1902	.. ..	55 cases.
,, ,,	31,	,,	.. ..	70 cases.
,, June	7,	,,	.. ..	55 cases.
,, ,,	14,	,,	.. ..	61 cases.

Of the 61 cases notified in the week ended June 14, 19 were enteric fever, 11 erysipelas, 9 diphtheria, 11 continued fever, 5 scarlet fever, 3 membranous croup, and 2 small-pox.

ENGLAND AND SCOTLAND.

The mortality for the week ended Saturday, June 14, in 76 large English towns, including London (in which the rate was 14·1), was equal to an average annual death-rate of 15·0 per 1,000 persons living. The average rate for eight principal towns of Scotland was 19·0 per 1,000, the rate for Glasgow being 20·3 and for Edinburgh 19·8.

Vital Statistics.

For four weeks ending Saturday, July 12, 1902.

IRELAND.

Twenty-two Town Districts.

The average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ending July 12, 1902, in the Dublin Registration Area and the twenty-one principal provincial urban districts of Ireland was 16·6 per 1,000 of their aggregate population, which, for the purposes of these returns, is estimated at 1,092,322. The deaths registered in each of the four weeks ended Saturday, July 12, and during the whole of that period, in the several districts, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

Towns, &c.	Week ending				Average Rate for 4 weeks	Towns, &c.	Week ending				Average Rate for 4 weeks
	June 21	June 28	July 5	July 12			June 21	June 28	July 5	July 12	
22 Town Districts	18·9	19·0	21·0	16·6	18·9	Lisburn -	9·1	18·2	22·8	9·1	14·8
Armagh -	34·4	6·9	6·9	6·9	13·8	Londonderry	12·8	16·6	32·0	19·2	20·1
Ballymena	4·8	14·4	28·8	4·8	13·2	Lurgan -	8·9	4·4	35·4	4·4	13·3
Belfast -	20·9	16·6	21·4	17·2	19·0	Newry -	16·6	20·7	4·1	20·7	15·5
Clonmel -	20·4	51·1	15·3	10·2	24·2	Newtownards	40·1	22·9	28·6	28·6	30·0
Cork -	16·5	18·5	24·0	23·3	20·6	Portadown	31·1	10·4	5·2	10·4	14·3
Drogheda -	32·7	12·3	8·2	20·4	18·4	Queenstown	6·6	39·7	13·2	6·6	16·5
Dublin - (Reg. Area)	17·9	19·9	19·1	16·9	18·5	Sligo -	28·8	14·4	9·6	4·8	14·4
Dundalk -	16·0	16·0	12·0	8·0	13·0	Tralee -	5·3	10·6	26·6	0·0	10·6
Galway -	15·5	35·0	27·2	27·2	26·2	Waterford	21·4	9·7	11·7	23·4	16·6
Kilkenny -	24·8	64·6	14·9	5·0	27·3	Wexford -	28·0	9·3	46·7	18·7	25·7
Limerick -	13·7	28·8	31·5	8·2	20·5						

The deaths (excluding those of persons admitted into public institutions from without the respective districts) from the principal zymotic diseases, registered in the 22 districts during the week ended Saturday, July 12, were equal to an annual rate of 2·2 per 1,000, the rates varying from 0·0 in twelve of the districts to 9·6 in Sligo. Among the 118 deaths from all causes registered in Belfast are 7 from measles, 4 from whooping-cough, 2 from diphtheria, 4 from enteric fever, and 3 from diarrhœa. The 34 deaths in Cork include one from measles, one from whooping-cough, and 2 from diarrhœa.

DUBLIN REGISTRATION AREA.

In the Dublin Registration Area the births registered during the week ended Saturday, July 12, amounted to 187—94 boys and 93 girls; and the deaths to 129—68 males and 61 females.

Deaths.

The registered deaths represent an annual rate of mortality of 17·7 in every 1,000 of the population. Omitting the deaths (numbering 6) of persons admitted into public institutions from

localities outside the Area, the rate was 16·9 per 1,000. During the twenty-eight weeks ending with Saturday, July 12, the death-rate averaged 24·7, and was 3·3 below the mean rate for the corresponding portions of the ten years 1892–1901.

The 129 deaths registered in the week ended Saturday, July 12, include 6 deaths from measles, 2 deaths from whooping-cough, one death from diphtheria, 4 deaths from enteric fever, and 4 deaths from diarrhœal diseases, including one registered as epidemic diarrhœa. There was also one death registered from infective endocarditis.

There was one death from tuberculous phthisis, and 13 deaths were registered as due to *phthisis;* in addition to one death from tuberculous meningitis, 3 deaths from tuberculous peritonitis, and 2 deaths from other forms of tuberculous disease.

There were 3 deaths from carcinoma, and 3 deaths were registered as *malignant disease* (*cancer*).

There were 7 deaths from diseases of the nervous system, in which are included 3 deaths from meningitis and 3 deaths from *convulsions*. The victims of the last-named were all infants within the age period of over one month and under one year.

There were 18 deaths from diseases of the heart and blood-vessels, including one from cerebral hæmorrhage and 3 from *apoplexy*.

There were 24 deaths from diseases of the respiratory system, including 13 from bronchitis, 3 from broncho-pneumonia, and 3 from *pneumonia*. The total equals an annual rate of 3·3 per 1,000 of the population of the Registration Area, the average rate for the corresponding period in the last 10 years being 3·1 per 1,000.

There were 3 deaths from accident and one death by suicide.

In 2 instances the cause of death was "uncertified," there having been no medical attendant during the last illness; these cases comprise the death of one child under one month old.

Thirty-eight of the persons whose deaths were registered during the week ended July 12 were under 5 years of age (19 being infants under one year, of whom 7 were under one month old), and 28 were aged 60 years and upwards, including 12 persons aged 70 and upwards, of whom 2 were octogenarians, and one (a woman) was stated to have been aged 90 years.

The Registrar-General points out that the names of causes of death printed above in italics should be avoided whenever possible in Medical Certificates of the Cause of Death.

STATE OF INFECTIOUS DISEASE IN DUBLIN.

(1.) Cases of Infectious Diseases Notified to the Public Health Committee of the Corporation.

Sir Charles A. Cameron, C.B., Medical Superintendent Officer of Health for the City of Dublin, has furnished information regarding the number of cases of infectious diseases in the City of Dublin notified under "The Infectious Diseases (Notification) Act, 1889," as follows :—

Week ending June	21,	1902,	..	..	198	cases.
,, ,,	28,	,,	..	..	254	cases.
,, July	5,	,,	..	..	239	cases.
,, ,,	12,	,,	..	..	305	cases.

Of the 305 cases notified in the week ended July 12, 21 were erysipelas, 11 enteric fever, 10 scarlatina, 3 diphtheria, 252 measles, one "fever" and 2 "continued fever," 5 chicken-pox.

(2.) Cases of Infectious Disease in Rathmines Urban District.

Mr. Fawcett, Executive Sanitary Officer for Rathmines Urban Council, has furnished information regarding the number of cases of infectious diseases in the Urban District of Rathmines notified under "The Infectious Diseases (Notification) Act, 1889," as follows :—

Week ending June	21,	1902,	..	..	7	cases.
,, ,,	28,	,,	..	..	3	cases.
,, July	5,	,,	..	..	5	cases.
,, ,,	12,	,,	..	..	2	cases.

Of the 2 cases notified in the last week, one was "continued fever," and one was diphtheria.

(3.) Cases of Infectious Disease in Pembroke Urban District.

Mr. Manly, Executive Sanitary Officer for Pembroke Urban Council, has furnished information regarding the number of cases of infectious disease in the Urban District of Pembroke notified under "The Infectious Diseases (Notification) Act, 1889," as follows :—

Week ending June	21,	1902,	..	..	29	cases.
,, ,,	28,	,,	..	..	38	cases.
,, July	5,	,,	..	..	41	cases.
,, ,,	12,	,,	..	..	34	cases.

Of the 34 cases notified in the last week, 24 were measles, 8 whooping-cough, one was enteric fever, and one was diphtheria.

(4.) Cases of Infectious Diseases under Treatment in Dublin Hospitals.

During the week ended Saturday, July 12, 65 cases of measles were admitted to hospital, 63 were discharged, there were 2 deaths, and 163 cases remained under treatment at the close of the week.

Three cases of enteric fever were admitted to hospital, 4 cases were discharged, there were 2 deaths, and 24 cases remained under treatment at the close of the week.

Five cases of scarlatina were admitted to hospital, 8 cases were discharged, and 58 cases remained under treatment at the close of the week.

Seven cases of diphtheria were admitted to hospital, 4 were discharged, there was one death, and 20 cases remained under treatment at the close of the week.

In addition to the above-named diseases, 7 cases of pneumonia were admitted to hospital, 6 patients were discharged, and 16 cases remained under treatment at the end of the week.

STATE OF INFECTIOUS DISEASE IN THE CITY OF BELFAST.

Dr. Whitaker, Medical Superintendent Officer of Health, has furnished information regarding the number of cases of infectious diseases in the City of Belfast notified under "The Infectious Diseases (Notification) Act, 1889," as follows :—

Week ending	June	21,	1902,	..	..	45 cases.
,,	,,	28,	,,	..	..	47 cases.
,,	July	5,	,,	..	..	92 cases.
,,	,,	12,	,,	..	..	46 cases.

Of the 46 cases notified in the week ended July 12, 29 were enteric fever, 5 erysipelas, 3 diphtheria, 6 "continued fever," and one scarlet fever.

ENGLAND AND SCOTLAND.

The mortality for the week ended Saturday, July 12, in 76 large English towns, including London (in which the rate was 14·6), was equal to an average annual death-rate of 14·5 per 1,000 persons living. The average rate for eight principal towns of Scotland was 16·2 per 1,000, the rate for Glasgow being 16·2, and for Edinburgh 17·9.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ *N., Long.* 6° 15′ *W., for the Month of June*, 1902.

Mean Height of Barometer, - - -	29·893 inches.
Maximal Height of Barometer (24th, at 9 a.m.),	30·213 ,,
Minimal Height of Barometer (20th, at 9 a.m.),	29·490 ,,
Mean Dry-bulb Temperature, - - -	55·6°.
Mean Wet-bulb Temperature, - - -	52·5°.
Mean Dew-point Temperature, - - -	49·7°.
Mean Elastic Force (Tension) of Aqueous Vapour,	·358 inch.
Mean Humidity, - - - -	81·2 per cent.
Highest Temperature in Shade (on 25th), -	74·7°.
Lowest Temperature in Shade (on 10th), -	42·1°.
Lowest Temperature on Grass (Radiation) (10th),	37·6°.
Mean Amount of Cloud, - - -	64·0 per cent.
Rainfall (on 17 days), - - - -	2·371 inches.
Greatest Daily Rainfall (on 19th), - -	·738 inch.
General Directions of Wind, - - -	N.E., S.E.

Remarks.

Winter and summer may be said to have met in this month. The mean temperature of the three weeks ended the 21st was 53·2°, that of the fourth week was 63·0°, an excess of nearly 10°. In the second week (ended the 14th) the shade temperature rose no higher than 59·1°. In the fourth week (ended the 28th) the lowest shade temperature was 53·1°, and on the 25th the thermometer rose to 74·7° in the screen. Winds from polar quarters prevailed throughout the month, but their force was light in the fourth week, and unclouded sunshine overcame their chilling effect. Up to the 22nd the rainfall was frequent, but heavy only on the 1st (·648 inch) and 19th (·738 inch). The duration of sunshine was estimated at 193 hours, giving a daily average of 6·4 hours. The percentage of cloud was high for June—64 per cent.

In Dublin the arithmetical mean temperature (56·7°) was below the average (57·8°) by 1·1°; the mean dry-bulb readings at 9 a.m. and 9 p.m. were 55·6°. In the thirty seven-years ending with 1901, June was coldest in 1882 (M. T. = 55·8°) and 1879 ("the cold year") (M. T. = 55·9°). It was warmest in 1887

(M. T. = 62·3°); in 1896 (M. T. = 61·4°); and in 1899 (M. T. = 61·3°). In 1901 the M. T. was 56·9°.

The mean height of the barometer was 29·893 inches, or 0·024 inch below the corrected average value for June—namely, 29·917 inches. The mercury rose to 30·213 inches at 9 a.m. of the 24th, and fell to 29·490 inches at 9 a.m. of the 20th. The observed range of atmospheric pressure was, therefore, only 0·723 inch.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 55·6°, or 6·8° above the corresponding M. T. for May, 1902. Using the formula, *Mean Temp.* = *Min.* + (*Max.* — *Min.* × ·465), the value was 56·2°, or 1·0° below the average mean temperature for June, calculated in the same way, in the twenty-five years, 1865–89, inclusive (57·2°). The arithmetical mean of the maximal and minimal readings was 56·7°, compared with a twenty-five years' average of 57·8°. On the 25th the thermometer in the screen rose to 74·7°—wind, E.N.E. to S.S.E.; on the 10th the temperature fell to 42·1°—wind, W. The minimum on the grass was 37·6° on the 10th.

The rainfall amounted to 2·371 inches on 17 days. The average rainfall for June in the twenty-five years, 1865–1889, inclusive, was 1·817 inches, and the average number of rainy days was 13·8. The rainfall, therefore, and the rainy days were much above the average. It is, however, to be noted that 59 per cent. of the whole precipitation for the month occurred on two days—the 1st and 19th. In 1878 the rainfall in June was very large—5·058 inches on 19 days; in 1879, also, 4·046 inches fell on 24 days. On the other hand, in 1889, only ·100 inch was measured on 6 days. In 1887 the rainfall was only ·252 inch, distributed over 5 days. In 1900, 3·169 inches fell on as many as 22 days.

High winds were noted on only 5 days, and never reached the force of a gale. The atmosphere was foggy on the 24th. A lunar halo was seen on the 18th; solar halos appeared on the 4th, 21st, and 24th. Temperature reached or exceeded 70° in the screen on 7 consecutive days, commencing with the 23rd, compared with only one day in 1901, but as many as 17 days in 1887. Lightning was seen on the night of the 19th, and a thunderstorm occurred in the evening of the 29th.

The rainfall in Dublin during the six months ending June 30th amounted to 12·344 inches on 98 days, compared with 9·352 inches on 80 days in 1901, 13·090 inches on 114 days in 1900, 11·295 inches on 95 days in 1899, 12·115 inches on 98 days in

1898, 13·950 inches on 113 days in 1897, 7·854 inches on 84 days in 1896, 12·282 inches on 80 days in 1895, 14·361 inches on 109 days in 1894, 9·624 inches on 78 days in 1893, only 6·741 inches on 67 days in 1887, and a twenty-five years' average of 12·313 inches on 95·4 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall was 3·341 inches on 16 days. Of this quantity ·900 inch fell on the 1st, and ·830 inch on the 19th. The total fall since January 1 has been 15·091 inches on 84 days, compared with 13·670 inches on 75 days in the first six months of 1901, 18·191 inches on 105 days in those of 1900, 19·510 inches on 95 days in 1899, 13·500 inches on 88 days in 1898, 18·125 inches on 106 days in 1897, 7·356 inches on 61 days in 1896, 14·270 inches on 67 days in 1895, 17·381 inches on 96 days in 1894, and 11·776 inches on 75 days in 1893.

Dr. Arthur S. Goff reports the rainfall at Lynton, Dundrum, Co. Dublin, as 3·08 inches on 19 days, compared with 1·71 inches on 13 days in June, 1901, the greatest daily falls being ·90 inch on the 19th and ·87 inch on the 1st. The mean shade temperature was 57·0°. The thermometric range was from 45° on the 10th, 13th, and 15th to 78° on the 29th, when a thunder shower occurred.

The rainfall at Cloneevin, Killiney, Co. Dublin, was 2·60 inches on 18 days. The maximal fall in 24 hours was ·63 inch on the 1st. The average rainfall in June in the 17 years (1885–1901) was 2·564 inches on 15·2 days. The total fall at Cloneevin since January 1, 1902, amounts to 13·26 inches on 98 days.

Dr. J. Byrne Power, F. R. Met. Soc., Medical Superintendent Officer of Health, Kingstown, Co. Dublin, reports that the mean temperature at that health resort was 55·9°, the extremes being—highest, 72·5° on the 25th; lowest, 44·5° on the 10th and 13th. At Bournemouth the mean was 57·8°, the extremes being—lowest, 44° on the 16th and 17th; highest, 80° on the 28th and 29th. These figures confirm the statement in last report that the relative condition of temperature at Kingstown and at Bournemouth becomes reversed at or about the summer solstice, etc. The daily range of temperature at Kingstown was 11·8° and at Bournemouth 13·8°. The mean temperature of the sea at Sandycove Bathing Place was 55°. The rainfall was 2·14 inches on 16 days at Kingstown, and at Bournemouth 2·81 inches on 16 days. The total duration of bright sunshine at Kingstown was 165·8 hours,

whereas it was 177·6 hours at the Ordnance Survey Office, Phœnix Park, 159·4 hours at Valentia, 137·1 hours at Parsonstown, 179·9 at Southport, and 162·7 at Eastbourne. The average duration of bright sunshine for the month of June, during 11 years (1891–1901), at the Ordnance Survey Office, Phœnix Park, was 206·3 hours.

THE SOCIETY OF MEDICAL PHONOGRAPHERS.

THIS Society will hold its next Annual Shorthand Examination early in May, 1903. Two prizes will be offered, each of the value of £5, one for first-year students and one for students of more than one year's standing. The competition will be open to any Registered Medical Student in the United Kingdom who has not taken a first prize at one of the Society's previous examinations. It will be held simultaneously in London, Edinburgh, Dublin, and at any provincial medical centre in the United Kingdom at which not fewer than three Candidates shall offer themselves. Intending Candidates should send in their names as early as possible to Dr. P. G. Griffith, Bonhams, Farnborough, Hants, who will furnish them in return with a detailed Prospectus of the Examination. The latest date for receiving entries will be April 15th, 1903.

ROYAL COLLEGE OF SURGEONS, EDINBURGH.

AT a meeting of the College held on Wednesday, July 2, 1902, the following gentlemen, having passed the necessary Examinations, were admitted Fellows of the College :—John Broadley, M.B., Sheffield; Charles John Caddick, M.B., C.M., Sutton Coldfield; David Robertson Dobie, M.D., Crieff; Robert Edwin Goone-Tilleke, L.R.C.S.E., Ceylon; Henry M'Ilree Williamson Gray, M.B., C.M., Aberdeen; Abraham Haynes, L.R.C.S.E., Beechworth, Victoria; Guy Bertram Hollings, M.D., M.R.C.S. Eng., London, N.W.; Albert Henry Beaumont Kirkman, M.R.C.S. Eng., London, S.E.; Francis Lionel Provis, M.R.C.S. Eng., London, W.; Matthew Carrington Sykes, M.R.C.S. Eng., Barnsley; and Gangakanta Nag, L.R.C.S.E., Edinburgh.

PERISCOPE.

THE SANITARY INSTITUTE.

THE preliminary Programme of the Nineteenth Congress, to be held in Manchester, from September 9th to 13th, 1902, has now been issued. The President of the Congress is the Right Hon. the Earl Egerton of Tatton. W. N. Shaw, M.A., D.Sc., F.R.S., will deliver the lecture to the Congress, and Sir W. J. Collins, M.D., B.Sc., F.R.C.S., D.L., J.P., Member of the London County Council, will deliver the popular lecture. Excursions to places of interest in connection with Sanitation and a Conversazione will be arranged for those attending the Congress. It appears from the Programme that over 300 Authorities, including several County Councils, have already appointed Delegates to the Congress, and, as there are also over 2,500 Members and Associates in the Institute, there will probably be a large attendance in addition to the local members of the Congress. In connection with the Congress, a Health Exhibition of Apparatus and Appliances relating to Health and Domestic Use will be held as a practical illustration of the application and carrying out of the principles and methods discussed at the Meetings; it not only serves this purpose but also an important one in diffusing sanitary knowledge among a large class who do not attend the other Meetings of the Congress. The Congress will include three General Addresses and Lectures. Three Sections meeting for two days each, dealing with (1) Sanitary Science and Preventive Medicine, presided over by Sir James Crichton-Browne, M.D., LL.D., F.R.S., F.R.S.E.; (2) Engineering and Architecture, presided over by Sir Alexander Binnie, M. Inst. C.E.; (3) Physics, Chemistry, and Biology, presided over by Prof. A. Sheridan Delépine, M.B., C.M., B.Sc. Eight special Conferences; Municipal Representatives, presided over by Ald. Alex. M'Dougall, J.P., Vice-Chairman of the Health Committee, Manchester; Port Sanitary Authorities, Ald. Walton Smith, J.P., Chairman of Manchester Port S.A.; Medical Officers of Health, presided over by James Niven, M.A., M.B.; Engineers and Surveyors to County and other Sanitary Authorities, presided over by Charles Jones, M. Inst. C.E.; Veterinary Inspectors, W. Augustus Taylor, F.R.C.V.S.; Sanitary Inspectors, presided over by W. Bland, Sanitary Inspector, Barton-upon-Irwell; Domestic Hygiene, presided over by Mrs. W. O. Meek; Hygiene of School Life, presided over by Prof. C. S. Sherrington, M.A., M.D., F.R.S. The local

arrangements are in the hands of an influential Local Committee, presided over by the Right Hon. the Lord Mayor of Manchester, with J. H. Reynolds, Principal of the Municipal School of Technology, as Honorary Secretary. The Secretary of the Institute is Mr. E. White Wallis, Parkes Museum, Margaret-st., London, W.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

"*Tabloid*" *Urea.*

ALTHOUGH this remedy is still only upon trial in the treatment of tuberculosis, the reports of observers upon the results which have followed its use are very encouraging. The dose recommended is from five to twenty grains three times a day, subject to modification by the physician, as the condition of the patient may indicate. The "Tabloid" prepared by Messrs. Burroughs, Wellcome & Co. offers a reliable and convenient means of administering this agent, and it will no doubt be found useful by physicians. "Tabloid" Urea, gr. 5 (0·32 4 gm.), is issued in bottles containing 100.

"*Tabloid*" *Sodium Cacodylate and* "*Tabloid*" (*Hypodermic*) *Sodium Cacodylate.*

SODIUM Cacodylate has recently been held to be of service in the treatment of diseases in which arsenic has been used, and soon after its introduction was administered in considerably larger doses than are now recommended. Being a compound containing arsenic, the necessity of exact dosage is obvious. "Tabloid" Sodium Cacodylate, gr. $\frac{1}{4}$, is issued in bottles of 100, and "Tabloid" (Hypodermic) Sodium Cacodylate, gr. $\frac{1}{4}$, is issued in tubes of 12.

"*Tabloid*" *Lithium Citrate and Sodium Sulphate* (*Effervescent*).

EACH product contains Lithium Citrate gr. 5, with Sodium Sulphate gr. 30, and when added to the requisite quantity of water provides an effervescing draught, which should prove of service in gouty and other conditions in which it is desired to administer lithium citrate with a gentle laxative. "Tabloid" Lithium Citrate and Sodium Sulphate (Effervescent) is a reliable preparation of unvarying therapeutic value. Its constituents are of a high degree of purity, and it will be found to yield an active and refreshing draught. It is issued in tubes containing 25 by Messrs. Burroughs, Wellcome & Co., Snow Hill Buildings, London, E.C.

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MEDICAL SCIENCE.

SEPTEMBER 1, 1902.

PART I.

ORIGINAL COMMUNICATIONS.

ART. VIII.—*On Some Controversial Points in Preventive Medicine.*[a] By SIR CHARLES A. CAMERON, C.B., M.D., Honorary F.R.C.P.I., F.R.C.S.I., D.P.H. Camb.; Professor of Chemistry and Hygiene, R.C.S.I.; Chief Medical Officer of Health for Dublin, &c.

THE special subjects which might be appropriately considered under the general heads of Preventive Medicine and Vital Statistics are so numerous that in an Introductory Address it is impossible to deal with more than a very small proportion of them. Preventive Medicine, in the most comprehensive definition of the term, includes all the means proposed or adopted for preventing diseases, except those incidental to the natural decay of man. It is clear, then, that I have had abundance of materials for the preparation of an Address in this Section. I have selected from them some topics which are of special interest both to professional sanitarians and the general public. They relate to subjects in the domain of preventive medicine which are merely as yet suggestive, are more or less of a controversial nature, or are not yet in all respects settled.

[a] A Presidential Address to the Section of Preventive Medicine and Vital Statistics of the Congress of the Royal Institute of Public Health, Exeter, August, 1902.

THE RÔLE OF MICRO-ORGANISMS IN CAUSING, PREVENTING, AND CURING DISEASE.

Though invisible to the unaided eye, countless myriads of animals and plants inhabit air, water, soils, animals, vegetables, and almost every penetrable substance. Though there are thousands of species of them they may all be included under the designation of micro-organisms, or microbes. They are almost inconceivably minute. According to Bujwid, eight millions of pus microbes weigh only about the 75th part of one grain. A single drop of water often contains thousands of them. The average number found in London milk by Sidney Rowland was 500,000 per cubic centimetre (about 15 drops). A drop of ice cream, examined by Dr. W. C. Pakes, contained nearly 2 millions of microbes. Under the highest power of the microscope they can only be partially examined.

The micro-organisms play essential parts in the processes of nature which are indispensable for the maintenance of life (animal and vegetable) as it now exists. A relatively small number are, however, malignant as regards the higher animals and plants. They are termed pathogenetic, or disease-giving. It is only these that come within the purview of this Address.

The microscopic animals associated with infective diseases belong to the *Protozoa*, which include all the lowest forms of animal life. They are distributed by naturalists into four great divisions—*Rhizopoda*, *Sporozoa*, *Flagellata*, and *Infusoria*. The first three named include numerous species, some of which produce disease. The Rhizopoda are particles of jelly (protoplasm), consisting of single cells, each cell being in effect an animal. Although having no mouth, stomach, heart, or lungs, it can seize upon prey, and digest it. Flagellata have cells provided with a vibrating filament. The Sporozoa seem to be developed from bodies resembling the spores of plants.

Various species of protozoa cause the different forms of malaria. It has recently been proved that the mosquito is the host of certain protozoa; in biting man it introduces the poisonous micro-organism into the blood of the latter. A Flagellate produces, through the intermediary of the tse-tse

fly, a disease of horses and cattle, which often annihilates all these animals in extensive regions of Africa. Many forms of disease in man, and especially in the lower animals, are caused by protozoa.

The terminology of the micro-organisms is in a transition state, but popularly at least the term *bacterium* means any vegetable micro-organism below the level of the mycetal fungi. The Germans term them schizomycetes, or fission fungi. Some species are globular, single cells, and are termed Coccaceæ. Bacilli are rod-shaped; *vibrios* are elliptical, and spirilla are curved like a corkscrew. Some of the bacteria are endowed with locomotive powers. Those that exist without air are termed *anaërobic*; others requiring oxygen are designated *aërobic*. All multiply by division, some by throwing out spores as well. On the whole, light is inimical to malignant bacteria.

The study of the microscopic forms of life constitutes the modern, fascinating and rapidly-developing science of bacteriology. Judging by the good work which has already been accomplished it promises to become one of the most important, if not *the* most important, of adjuncts of Preventive Medicine.

It is now clearly established that microbes are the proximate cause of several of the diseases termed infectious, and which have received many other names—zymotic, contagious, preventable, filth, &c. By analogy, and also as the result of some experimental researches, all these diseases are believed to be the result of microbial action, and to admit of extinction if the means of preventing the entry of the micro-organisms into the animal body, or of surely destroying them there, could be discovered. Earnest workers throughout the civilised world are engaged in attempts to accomplish this great object.

The malignant microbes when they gain access to the animal system injure it in two ways. Some, by feeding upon their host, multiply at the expense of its tissue, which may become so disorganised that death ensues. Such effects are caused by tubercle bacilli. Other bacteria develop both in living animals and in animal and vegetable substances poisons which have a close resemblance to the alkaloids—quinine, strychnin, &c. In decomposing flesh and fish they

frequently occur, and are termed *ptomaïns*. In many cases they have produced fatal effects. Produced in the living animal, they are named *leucomaïns*. Most of the pathogenetic bacteria produce their ill effects by poisonous secretions and excretions. Those termed *toxins* are believed to be unstable ferments (*enzymes*). They produce diseases of different kinds, every pathogenetic bacterium developing a different toxin. Combined with the protoplasm of the blood or tissues, they form toxalbumins, toxoglobulins, &c. The chemical composition of many ptomaïnes, poisonous and innocuous, has been determined; but of the chemical constitution of the toxins and toxalbumins our knowledge is very limited. Baldwin and Sevene suggest that proteolytic enzymes destroy toxins apparently by digesting them, but, perhaps, by neutralising them (*Journal of Medical Research*, July, 1901).

It is highly probable that the vast majority of the malignant, or pathogenetic, organisms which get into animals speedily perish without accomplishing any mischief. The serum of the blood possesses some slight power of digesting the organic matter, living or dead, placed in contact with it; but the real work of assimilation is carried on by the *phagocytes*. These are colourless amœboid cells, or leucocytes, of which the most potential are the poly-nuclear cells. The amœboid bodies are similar to the Rhizopoda. They enclose and digest both living and dead organic matter; and it is only when they are unable to master the pathogenic microbes that disease results from the multiplication of the latter and the production of their poisons. The leucocytes are much larger than the bacteria.

The ptomaïns are a common cause of the illness produced by the ingestion of decomposing food. More poisonous still are the *toxins* and *toxalbumins*. They produce "blood poisoning," and constitute the poison of the cobra and other serpents. The toxins and toxalbumins are differentiated by certain chemical reactions.

Protective "Cultures"—Lymph and Serums.—I have found it necessary to give the foregoing brief account of micro-organisms preparatory to describing how microbes themselves are employed to prevent and cure disease.

Inoculation as a prophylactic agent originated in the East,

and was practised in China from the sixth century, and probably earlier still in India. It was only in 1717 that it became known in England as a protective against small-pox. The introduction of small-pox pustular matter beneath the skin produced a disease so mild that, whilst it rarely proved fatal, it rendered the inoculated person immune against the ordinary virulent small-pox. The drawback to inoculation was its keeping in existence small-pox, a disease which it was desirable to extirpate.

Jenner's discovery of vaccination caused inoculation to gradually fall into disuse, and it was prohibited by statute in 1840.

Pasteur's masterly researches have within a short period led to the adoption of an extensive system of preventive inoculations, which give promise of results of the highest value as regards the lessening or extinction of infective diseases. He found that virulent microbes, when cultivated in various nutrient materials and placed under certain conditions (more especially of temperature), or passed through the bodies of animals, became in each generation milder. until at length they practically lost their virulence. These degenerate descendants of malignant bacteria (still possessing some infective properties), introduced into animals induced in them a mild attack of the disease associated with the uncultivated micro-organisms. This attack renders, or is likely to render, the subject of it immune to any future attack.

It is well known that a person who has survived the attack of an infectious disease is rarely subjected to a second one of the same kind. Why immunity is caused in this way has been the subject of an immense number of speculations. Although the cause of immunity is not thoroughly established, yet recent bacteriological researches have thrown much light on this difficult and obscure subject.

It is certain that when pathogenetic microbes establish themselves in the blood and tissues they produce poisons which act injuriously not only on the animal they infest, but on the microbes themselves. It would seem certain that the presence of the malignant bacilli and their toxins produces in the blood and tissues a *something* to which the term *anti-toxin* has been applied. There is an immense literature on the

subject of antitoxins. I use the plural term, for it is supposed that for each toxin there is probably a specific antitoxin.

Time will not permit me to discuss the intimate mechanism of immunity and the *rôle* now ascribed to "agglutinins,"* "alexins," "amboceptors," and other agents alleged to be employed against the pathogenic microbes and their toxins. There is much that is mere speculation in the discussion of this subject. It is most likely that the immunity caused by an attack of infective disease against a second one is due to a functional alteration in some of the cells of the blood and tissues. This is an entirely natural operation. These cells are antagonistic to the infective matter and in some way, by combination perhaps, neutralise the virus. The peculiarity which the cells thus acquire in presence of disease is transmitted to the cells which are developed from them; and the peculiarity may remain only for a brief period, as in the case of cholera, or for a lifetime. A similar functional change in cells probably takes place in the case of persons immune to poisonous doses of morphin, arsenic and other toxic bodies. Long continued small doses of these bodies ultimately produce a tolerance of a quantity which would prove fatal to persons who had not undergone similar treatment. The cells habituated to the poison ultimately acquire the property of neutralising it.

Of the nature of all the toxic secretions and excretions of bacteria our knowledge is very limited; but of some of them fairly good accounts have been given. They can be separated from the bacteria that produce them by filtration through unglazed porcelain, by dialysis, and by a centrifugal machine. Of the antitoxins we know but little. As the toxins are injurious to the organisms in which they are produced they may be regarded as in a certain sense antitoxins, or rather antimicrobial, but they play no direct part in producing immunity.

The possibility of producing immunity, wholly or partially, against small-pox has been, I think, clearly proved. As regards other diseases, researches to discover means of pre-

* The agglutinins are so called because they attach or glue together, so to speak, the toxic bodies and prevent their poisonous action. According to some authorities a combination between the toxins and antitoxins takes place, analogous to the "side chains" in chemical combinations.

venting their occurrence or of modifying their virulence are being carried out extensively.

Calmette, Fraser, Frisalex, and Bertrand inoculated rabbits with gradually increased doses of the poison of the cobra until the animals became insusceptible to doses which would have proved fatal to a rabbit not similarly treated. The serum of the blood of the animals thus treated was mixed with the poison of the cobra, and the mixture introduced into the system of normal rabbits, upon which it produced either no effects or a trifling disturbance.

Dr. Klein injected repeated doses of the virus of typhoid fever into the peritoneum of guinea pigs, until the animals became immune to far larger doses than would have killed a normal rabbit.

In these cases it is evident that some material is produced which is capable of destroying pathogenetic organisms. To this process the term *bacteriolysis* has been applied. Concurrently with it some arrangement for the removal of the disintegrated bacteria from the system must be made.

The serum of the blood of an animal rendered immune as regards a particular disease is used, sometimes therapeutically, sometimes as a preventive agent. For example, in the case of diphtheria in man, the serum of the blood of an animal rendered immune to that disease will often, when introduced into the patient's system, neutralise the poison of the bacillus of diphtheria. Applied early in the disease, good effects are likely to result.

Pasteur found that the poison of hydrophobia might be so modified that its introduction into the system of a person who had been bitten by a mad dog secured immunity against this terrible disease. The ingenious, prolonged, and numerous experiments by which Pasteur discovered his prophylactic constitute a real romance in the domain of science. The antidote to hydrophobia is prepared from the spinal cord of animals infected with rabies poison.

Anti-diphtheritic serum is prepared on a large scale at the Jenner Institute of Preventive Medicine and in many private establishments. The process consists of cultivating the bacilli of the disease in nutrient materials (blood, broth, &c.), and filtering the culture, so as to separate the bacilli from the

soluble toxins. The clear liquid is then injected repeatedly into horses until, in the course of a few months, the animals exhibit complete toleration of the poison. The serum of the blood of these immunised animals contains the antitoxin used in the treatment of diphtheria. The strength of the antitoxin is determined by injecting it and the toxin into rabbits, guinea pigs, &c.

Mallein, a substance used for the purpose of diagnosticating glanders in horses, is prepared from the bacilli of glanders. *Tuberculin*, used to detect tuberculosis in cattle, is prepared by cultivating in broth and glycerine the *Bacillus tuberculosis*. The liquid, separated by filtration from the bacilli and insoluble matters, is concentrated in vacuo. It was first suggested by Koch as a prophylactic for consumption, but it did not prove successful. It will thus be seen that there are two classes of substances used for producing immunity—(1) "attenuated" bacteria; (2) soluble products of bacteria. The anti-rabic material used by Pasteur is an example of the former, and the antitoxin of diphtheria of the latter.

The results of the use of antitoxins are recorded by the hundred in the pages of scores of medical journals. With some practitioners they have proved highly favourable, with others much less so. Very few medical men have, however, declared against their use as a class. Haffkine's anti-plague inoculation has been somewhat favourably reported on by the Indian Plague Commission, 1900, but not so favourably in the report on the outbreak of the plague in 1900 in Sydney, Australia. Symmers found it of little use in Egypt. Lustig's anti-plague serum is favourably reported on by several writers. At the Arthur-road Hospital, Bombay, it gave rather unsatisfactory results, due, it was suggested, to the extreme virulence of the plague epidemic. The case-mortality was 67·3 per cent. in the inoculated patients and 77·16 per cent. in the other patients.

Anti-typhoid serum has been extensively used in India and South Africa, and with variable, but on the whole favourable, results. Major Birt, R.A.M.C., states in the *British Medical Journal* for January 11th, 1902, that he found it effective in South Africa. The mortality amongst 947 uninoculated patients was 14·25 per cent., whilst of the 263

inoculated patients only 6·8 per cent. died. The disease was much milder in the case of the inoculated patients.

Tavel, of Berne, and Jez, of Vienna, have recorded several cases showing the therapeutic value of typhoid antitoxin; on the other hand, it has failed with many experimenters, probably owing to badly-prepared antitoxin.

THE STATE SHOULD PREPARE PROPHYLACTICS.

It is of the utmost importance that the vaccine lymph and the various antitoxins should be most carefully prepared. The "pure cultures" are not always free from foreign bacteria, and the serums are not always free from bacteria, nor are they invariably of uniform strength.

Calf lymph is prepared in the department of the English Local Government Board, but is supplied only to the public vaccinators. In Ireland the lymph is prepared at a private establishment, but the supply for the public vaccinators from it is regularly examined by the bacteriologist (Dr. E. J. McWeeney) of the Local Government Board of Ireland. In Scotland neither the practice in England nor that in Ireland is adopted.

The private vaccinator gets his vaccine lymph from various sources. It would be desirable to have this valuable article prepared exclusively in State laboratories. The same observation applies to the therapeutic serums, from the preparation or testing of which the State holds aloof. It is not so in many other countries. France gave a million of francs to found the Pasteur Institute, and gives it the annual sum of 200,000 francs. Japan, in the far East, is ahead of Great Britain in this direction. The preparation of serums in that country was formerly carried on by a society; but I learn from the last Annual Report of the Central Sanitary Bureau of Japan that the Government have established an institute for the preparation of serums. In addition to a resident staff of bacteriologists it has as consultant the eminent bacteriologist and pathologist, Dr. Kitasato. In one year no fewer than 22,578 bottles of various serums were prepared. The animals used for the purpose were horses and sheep.

I must, however, admit that as regards serum preparation the Jenner Institute of Preventive Medicine (endowed by

Lord Iveagh's magnificent gift of a quarter of a million) occupies almost the same position as a State establishment.

The recent establishment of bacteriological laboratories by a few sanitary authorities is a step in the right direction. I trust the example may be generally followed throughout the country. They would afford facilities to the practitioners to early diagnosticate diphtheria, tuberculosis and other diseases, and their bacterial examinations of milk, water, and other articles liable to infections could be properly carried out in the interest of the public health.

TUBERCULOSIS.

About 13 per cent. of the deaths in England and Wales are ascribed to tuberculosis. More than 80,000 persons perish annually in the United Kingdom from pulmonary tuberculosis, or consumption, as it is popularly termed.

It is only within a recent period that tuberculosis has been with certainty classed with the contagious diseases. At one time heredity was believed to be the principal factor in its production. Undoubtedly there are thousands of families amongst whom consumption appears to be the fatal legacy of their ancestors. The liability of particular families to contract this disease has its parallel in families prone to other maladies—cancer, for instance. In the case of tuberculosis the real factor in its causation is a special microscopic plant. For the discovery of the existence of this destructive microbe the world is indebted to Professor Koch, of Berlin. Why indebted? Because the first of the steps in disease-prevention is the discovery of the cause of it.

Before the contagious nature of pulmonary consumption was clearly proved no special measures were adopted to prevent it from spreading, though there were not wanting persons who considered that the propinquity of consumptives to healthy persons was not unattended with danger to the latter.

So far back as 1782 the King of Naples issued a decree ordering physicians to report on consumptives so soon as their lungs became ulcerated. In default of doing so they were to be fined 300 ducats, and on a repetition of the offence were to be banished for 10 years. It was also decreed that certain articles belonging to deceased consumptives should

be cleansed, and those susceptible to become infected should be burned or destroyed. The wood-work was also to be destroyed. The poor consumptives were to be removed to hospital. Opposition to these proceedings involved a sojourn of three years in prison, or the galleys if the offender belonged to the lower order, or if to the nobility, three years confinement in the castle and a penalty of 300 ducats.

At the present time no subject in either Practical or Preventive Medicine excites more attention, or is more frequently discussed in the medical and lay press, than tuberculosis. So important has it become that a great International Congress in relation to it was held last year in London, under the patronage of His Majesty.

As regards pulmonary tuberculosis, it seems almost a certainty that the chief cause of this form of the malady is the inhalation of the dried expectorated matter from the lungs of affected persons. The offensive habit of expectorating on floors, passages, pathways, in trains, omnibuses, railway carriages, &c., is largely the indirect cause of consumption. Some slight decrease of this objectionable habit has been noticed in some towns, owing to notices against it being put up in various places, and leaflets explaining its dangers issued by sanitary authorities and associations. The Glamorganshire County Council has passed a by-law prohibiting the practice on the floor of any church, public hall, theatre, waiting-room, carriage, &c.

In the Consumptives' Hospital and the phthisis wards of other hospitals precautions are taken to destroy, or render innocuous, infected sputum; but little in this direction is done in the case of patients living at home. If the disease were notifiable the sanitary authority would be in a position to supply spittoons and disinfectants to the poorer patients; they could also supply them, or the persons residing with them, with leaflets showing the danger arising from infected sputum, and containing other useful information.

The Secretary of State for the Home Department has approved of the by-law as applied to public carriages, public waiting rooms, and public halls and places of entertainment, but thinks it cannot properly be made to apply to churches, chapels, schools, or shops.

In Dublin a pretty large number of cases of consumption are voluntarily notified by the dispensary physicians, and many cases of the disease come to my knowledge through the inquiries of the sanitary inspectors. When I find that a poor patient is residing with his family, or in lodgings, I have him supplied with a pasteboard spittoon containing an absorbent material and a disinfectant, and with printed information relating to consumption. The spittoon is subsequently called for, brought to a destructor, and there it and its contents are consumed. The spittoons, which cost, apart from disinfectants, 3s. 6d. per 100, last about a week. Of course, as might be expected, the consumptives do not, in many cases, avail themselves of help or advice from the sanitary authority. Even when far advanced in the disease they object to be regarded as consumptives.

The compulsory notification of at least tuberculosis of the lungs is a factor absolutely necessary in the prevention of consumption. Several sanitary authorities have expressed their willingness to add it to the schedule of infectious diseases notifiable under the provisions of the Infectious Diseases Notification Act; but the Local Government Board have not given their assent to the proposal. It is evident that if this compulsory notification were adopted it would place consumptive patients in the same category with persons suffering from small-pox or scarlet fever. They would not be allowed to enter public conveyances or come into contact with the general public. The sanitary authority, with whom lies the administration of the Notification Act, would certainly not adopt the same measures with a consumptive as they would with a small-pox patient; but if they did not they would tacitly ignore the provisions of the Public Health Act relating to persons suffering from infectious maladies.

The proper thing would be to obtain an Act of Parliament enabling sanitary authorities to make lung tuberculosis compulsorily notifiable, but protecting the patients from such of the sections of the Public Heath Acts as would unduly interfere with their movements.

Until compulsory notification is adopted it is desirable to have a voluntary system. This system is adopted in a few towns, including Dublin, but on the whole not with very

satisfactory results. In reply to a query from the Incorporated Society of Medical Officers of Health, the Local Government Board states that they thought remuneration for notification might be made under the provisions of the Public Health Act.

The chief advantages to be gained by notification are as follow:—(1) The patient or his family, or others residing with him could be furnished with information as to the precautions to be taken to prevent him, so far as possible, from endangering the health of his co-residents. (2) Spittoons and disinfectants could be supplied. The patient should be informed that in the act of coughing he should hold his handkerchief before his face. It has been experimentally proved by Dr. Koeniger (*Zeitschrift für Hygiene*, Vol. 43) that, in the act of speaking, microbes, contained in moisture droplets, are projected from the mouth to a considerable distance. (3) On the death or removal of the patient his abode could be disinfected.

The disinfection of rooms vacated by consumptives is very generally neglected in the houses occupied by the poor. Every week I receive from the Registrar-General of Ireland a list of the places in which deaths from lung tuberculosis have occurred. In about 40 per cent. of the places permission to disinfect them is given. If tuberculosis were officially included amongst the infectious diseases, even if it were not notifiable, disinfection could be enforced.

Dr. Rohe has shown that wall scrapings from rooms occupied by consumptives inoculated into animals produced in 20 per cent. of them tuberculosis (*Transactions of the Medical and Surgical Faculty of Maryland*, 1894).

The establishment of sanatoria for the *treatment* of consumption must also be regarded as a preventive measure. It lessens greatly the danger of the disease being spread, owing largely to the destruction of infected sputum, and for other obvious reasons.

The sanitary authorities should make provision for receiving the poor consumptives into sanatoria. They are treated in general hospitals, but generally they are discharged from these institutions as incurables. They return to their families or friends and contribute to the infection of fresh victims.

Of course overcrowding, want of sufficient light and pure air in dwellings, long hours of labour in impure atmospheres, and other insanitary conditions tend to increase the amount of tubercular disease. Therefore it may in general terms be said that every sanitary improvement is more or less a preventive of consumption and many other diseases also.

IS BOVINE TUBERCULOSIS TRANSMISSIBLE TO MAN?

Until 1901 few, if any, persons doubted that the ingestion of the flesh and milk of cows affected with tuberculosis might give rise to the same disease in man. The researches by many veterinarians, medical men and bacteriologists, and the evidence given before the recent Commission on Tuberculosis, seemed clearly to establish the identity of human and bovine tuberculosis. There were differences of opinion as to the extent of disease in an animal which would justify the destruction of its flesh or milk, but that in certain conditions of the disease the flesh or milk might be disease-giving seems to have been almost universally accepted. It was, therefore, a great surprise when Professor Koch announced at the Tuberculosis Congress, 1901, that he failed to infect cattle with human tubercular virus. He inferred from the insusceptibility of the animals that human and bovine forms of the disease were distinct. Of course Dr. Koch did not try to inoculate a human being with the tubercular virus of the ox, but he inferred from his experiments that man was insusceptible to the bovine infection. If such is the case, then enormous quantities of food have been needlessly destroyed, and money and time wasted in the Pasteurising and sterilising of milk.

Dr. Schutz, a well-known authority, supports Koch's view. Dr. Sidney Martin found that the flesh of tuberculous oxen given to 81 animals susceptible of tubercular infection produced no ill effects.

Very eminent pathologists and bacteriologists dissent from Koch's views, regarding them as "not proven." I may mention Lord Lister, Nocard, MacFadyen, Bang, Woodhead, Crookshank, Klebs, and Behring.

Last May, Sir Nigel Kingscote reported to the Council of the Royal Agricultural Society the results of experiments carried out by their directions. A cow, two yearlings, and

two calves were inoculated by human tubercular virus. The cow became affected with the bacilli of the disease and did not recover for six months. The calves, when treated with tuberculin, showed an increase of temperature, indicating that infection had taken place, but, on being killed, the bacilli were not found, the infection having been transitory. Whilst demonstrating the possibility of transmitting tuberculosis from man to the ox, the experiments seem to show that, under ordinary circumstances, the danger to cattle from man is slight.

Arloing, in a recent communication to the French Academy of Medicine, states that he has infected 23 animals (cattle, sheep, and goats) with human tuberculosis.

At the meeting of the British Medical Association, 1st August, 1902, Dr. Delépine stated that he had communicated tuberculosis from man to the ox, and that the disease was identical in both.

Sir James Blyth, Bart., has allowed his two famous herds at Stansted, Essex, to be experimented on. I think it will be announced that the experiments made on them will negative completely Koch's theory.

As regards milk, the evidence given before the first British Tuberculosis Commission was very strongly in favour of the view that it was infected only when the cow's udder had tubercular ulcers. This is the view of Professor Conn, of Connecticut Agricultural College, based on a year's experiments. The same view is supported by the result of 30 animal experiments performed last year at the Model Farm, Glasnevin, by Dr. E. J. McWeeney, and reported on by him in the Journal of the Irish Department of Agriculture for June, 1902. In not one of the 30 cases did he succeed in communicating tuberculosis by the milk of cows, which, although undoubtedly tubercular, had healthy udders.

As against this, Klein found tubercle bacilli in the milk of a cow the udders of which were pronounced to be free from disease by a veterinary surgeon. It might be doubted if the udders were really healthy.

On the whole it does not seem to be thoroughly established that human and bovine tuberculosis are distinct diseases. Is it not possible that the bacilli of man may be identical

with those of cattle, but not so potential? The phagocytes of so strong an animal as the ox might be able to oppose a greater resistance to the human bacilli than the phagocytes of man could oppose to the infective bacilli of the ox. The recent experiments of Dr. M. P. Ravenel show the great virulence of the bacilli of the ox, and render probable their high infecting power on man.

Until we have further and absolutely reliable information on this subject the sanitary authorities would not be justified in permitting the sale of the flesh of animals seriously affected by tuberculosis or the milk of cows with ulcerated udders. As for myself, I have a strong opinion that the popular prejudice against the use of the flesh and milk of diseased animals is founded upon a true instinct.

THE CONDITION OF THE SOIL A FACTOR IN THE CAUSATION OF TYPHOID FEVER.

There is an overwhelming amount of evidence showing that localised epidemics and single cases of typhoid fever were caused by defective sewers and polluted water, milk, and shell-fish. There are, however, constantly occurring cases of this disease which cannot be accounted for on the presumption of polluted food or water, or defective sanitary conditions. The disease in its endemic form is probably often due to a polluted condition of the soil.

During the last twenty years I have studied the incidence of this disease in Dublin, and have ascertained that 50 per cent. more cases per 1,000 persons occur in houses situated on loose gravels than in those built on stiff boulder clay. I have attributed this greater prevalence of typhoid fever on loose soils to the more favourable conditions for the development of the typhoid bacilli in them. The pollution of the soil in Dublin was carried on for centuries before the water carriage system of filth removal was adopted, and continued in the poorer quarters of the city until a comparatively recent date. The receptacles in which filth was stored were defective as a rule, and allowed some of their contents to pass into the soil.

Dublin has one of the purest water supplies in the world.

The main sewers are of modern construction, and the private drains which discharge into them are just the same kind as in London. The zymotic death-rate is slightly less than the average in the 33 largest English towns. Notwithstanding all this, Dublin has nearly the highest typhoid fever death-rate in the United Kingdom. The change from the conservancy, or storage, system to the water carriage plan of filth disposal should cause a diminution of the amount of typhoid fever, on the presumption that there was a connection between the soil and that disease. This improvement must take place, but very slowly, for it requires a long time before an uncultivated polluted soil becomes pure.

Chichester had a bad history as regards typhoid fever. An investigation as to the prevalence of the disease in that city was made, in 1899, by Dr. Theodore Thomson and Colonel Marsh, R.E., by direction of the Local Government Board. The city is essentially a midden one. The reporters having negatived the assumption that water, rainfall, defective sewage and food were not important factors in the endemicity of typhoid fever in this city, were forced to the conclusion that it was probably due to pollution.

Inquiries made by Local Government Board Inspectors as to the excessive number of deaths from enteric fever in Burton-on-Trent, Pendlebury, and Swinton, failed to discover any cause for it unless a probable polluted condition of the soil.

The investigations of Dr. Sidney Martin, Dr. Robertson, and others show the great viability and persistency of typhoid bacilli in polluted soils.

The sooner filth is removed to a distance from the place where it is produced the better it is for the public health. It is significant that there are on the average higher death-rates in the towns where the midden system prevails than in those which have adopted the water carriage mode of filth removal. The purer we keep the soils that are close to our dwellings the less likely are we to become the objects of microbial attacks.

SHELL-FISH THE VEHICLE OF ZYMOTIC POISONS.

At the meeting of the British Medical Association at Cambridge in 1880 I read a paper on the bacteriological exami-

nation which I had made of oysters obtained from Dublin Bay, and in which I found undoubted sewage. I pointed out that if polluted water and milk were the media by which typhoid fever was spread, sewage-polluted oysters, and other shell-fish, might also contain the *materies morbi* of that disease. More than ten years later I proved on the clearest evidence that a small outbreak of severe gastro-enteritis was due to the ingestion of oysters obtained from beds likely to be the recipients of sewage. Still later Sir John W. Moore gave an account in the *Practitioner* of an attack of what he termed "oyster fever," which came under his notice.

In 1894 Professor H. W. Conn described[a] an outbreak of enteric fever amongst the students of Wesleyan University, Connecticut, which he attributed on very good evidence to the use of sewage-polluted oysters.

In the *British Medical Journal* for January 12, 1896, Sir William Broadbent described six cases of typhoid fever, which he was satisfied had been caused by polluted oysters.

Dr. Newsholme states that in 1894 to 1897, inclusive, 31 per cent. of the 181 cases of typhoid fever in Brighton were due to the use of polluted shell-fish, chiefly oysters.

In 1890 Professor McWeeney and myself investigated a case in which it was shown that mussels taken from sewage-polluted sea water caused the death of several persons at Seapoint, County of Dublin.

Many cases of illness attributed to polluted shell-fish have been recorded in the medical journals. In 1895 the whole subject was treated in a comprehensive report on "Oyster Culture in Relation to Disease," in a supplement to the Twenty-fourth Annual Report of the Medical Officer of the Local Government Board. Dr. Bulstrode's part of the Report makes up no less than 108 pages. Bacteriological researches of Dr. Klein are described in 53 pages of text, with numerous illustrations; and the paper of Dr. Conn, and some proceedings concerning oysters before the French Academy of Medicine, are given. The Report is most valuable, and it shows that many of the oyster beds in England are liable to pollution.

Although De Giax and Petit assert that typhoid bacilli

[a] Seventeenth Annual Report of the Role Board of Health of the State of Connecticut.

speedily perish in salt water, their viability in that fluid has been clearly proved by Klein and Foot. Dr. Bordoni-Uffreduzzi, of Milan, found them in the oyster, but only in the liquid outside the mantle. Professors Herdman and Boyce state in a paper read before the Royal Society that they detected *Bacilli coli communis* and Klein's *Bacillus enteriditis sporogenes* in oysters obtained from shops, though these organisms were not found in oysters procured from open sea water. They suggest a code of regulations for preventing the pollution of the places where shell-fish are developed.

There has been an attempt to legislate on the subject of the registration and inspection of oyster beds, but not a successful one. A comprehensive Act for the prevention of the pollution of the places where oysters and other molluscs are developed is urgently required. In the meantime, whatever powers the local sanitary authorities have that can be applied to prevent the pollution of oysters should be made use of. Acting upon my suggestion, the Dublin Port and Docks Board refused to renew the lease of the oyster beds, from which, in 1880, I had obtained polluted oysters. The beds were below the level of the exit end of several adjacent sewers, and consequently, at low water, the sewage had direct access to the oysters. Some beds are very properly raised above the level of the sewers.

NEW CLOTHES A VEHICLE OF DISEASE.

In the last Act relating to factories and workshops it is provided that the employers of persons who work in their own dwellings are to furnish the sanitary authorities with a list of the residences of their employés. The object of this provision is to enable the sanitary authorities to have the abodes of tailors, dressmakers, &c., inspected, with the view of preventing work being carried on in rooms in which persons suffering from infective diseases are located.

That clothes whilst being made may become infected with the virus of scarlet fever, measles, small-pox and similar diseases has been proved on the clearest evidence. Several cases of scarlet fever, contracted by wearing infected new clothing, have come under may own notice.

Large numbers of recruits for the Royal Irish Constab-

ulary are quartered in the Depôt of that force, Phœnix Park, Dublin, where they remain for some time in order to be drilled. For many years the recruits were peculiarly liable to contract scarlet fever. Every month cases of the disease occurred amongst them, often more than half a dozen. The hygienic conditions in the Depôt are excellent, and only the recruits were attacked with the disease. Having been consulted as to the cause of this continued occurrence of scarlet fever, I concluded that it was due probably to the clothes supplied to the recruits being made by persons who had just recovered from scarlet fever, or had been in contact with persons affected by that disease. If such were the case the obvious remedy was to sterilise the new clothes before they were brought to the Depôt. This advice was acted upon, and disinfection commenced towards the end of April, 1901. On the 15th May of the same year a case occurred, but since that date up to the present the recruits have been quite free from scarlet fever. I think it is desirable that all new clothes should be sterilised before being worn. The case of the Constabulary recruits cannot be a peculiar one. Their uniforms were made partly in workshops, partly in rooms in tenement houses. In the same way much of the clothing of the general population is made. Even in well-ventilated workshops it is possible that clothes may be infected, for the workers in them must surely sometimes come from homes where they have relatives ill from infectious disease.

One Dublin tailor uses a disinfecting chamber designed by Dr. McWeeney for sterilising new clothes. Formalin vapour is used in it with satisfactory results.

I now conclude by expressing the hope that the papers to be read in this Section may prove more interesting and important than this Presidential Address, the length of which, I fear, has been too great a tax upon your patience.

ART. IX.—*A Series of Cases illustrating the Influence of Utero-Ovarian Trouble in the Production of Intestinal Obstruction.* By JOHN STEPHEN M'ARDLE, F.R.C.S.I.; Surgeon and Lecturer on Surgery to St. Vincent's Hospital; Assistant Professor of Operative Surgery, C. U. I.; Consulting Surgeon, Children's Hospital, Temple-street; Consulting Surgeon, National Hospital, Holles-street; Member of Council, Royal College of Surgeons, Ireland.

(*Continued from page 32.*)

CASE VI.—Miss F. On Friday, June 13th, I was asked to see a case by Dr. Merrin at the Charlemont-street Private Hospital. She had been suffering from constipation for a week, had gradually become distended, and during the time she suffered from severe pain in the lower abdomen and back. Vomiting had set in on the 11th, and on the night of the 12th Dr. Merrin was called in. He tried the ordinary remedies, including enemata, but without effect. The previous history of the case showed that for many years she had suffered from constipation, and that evacuation of the bowel was attended with severe straining and considerable general pelvic pain. When I saw the patient she had a quick, small pulse, a furred tongue, a drawn, anxious expression of face and a very greatly distended abdomen. The conclusion I arrived at was that some uterine or ovarian tumour was pressing on the rectum, leading to the symptoms above described. A short time after my examination I opened the abdomen between the umbilicus and pubes. Section of the peritoneum was followed by a discharge of a considerable amount of a brownish fluid, which proved to be the contents of a ruptured cyst which lay behind the right broad ligament and uterus. Drawing the empty cyst forwards I explored Douglas's pouch and found a second tumour wedged down between the uterus and rectum. This tumour was adherent in every direction, and while endeavouring to free it rupture occurred and fluid of the same brown colour as mentioned above gushed from the wound. With much difficulty I freed the sac from its connections with the sigmoid and rectum and the back of the uterus, and, ligaturing the common pedicle, I removed the two tumours. I now flushed out the pelvis, and laying a gauze drain reaching as far as the pedicle, I closed the abdominal wound. The patient rallied soon after the operation, the pulse getting

stronger and the drawn expression of the face disappearing. The vomiting, which was coffee ground and had lasted for 48 hours, continued for a little while; then dark-green discharges occurred. The abdomen remained distended, no fæces or flatus passing. On the 14th a turpentine and oil injection was administered with excellent result. Dr. Merrin, watching the case carefully, found it necessary to give hypodermics of strychnin and digitalin occasionally. On the 16th distension became very marked, patient being now very restless and complaining greatly of thirst. Again turpentine and oil injections were ordered, and at the same time bismuth was administered by the mouth. Free evacuation of the bowels took place with explosive discharges of flatus. This relieved the patient very much and vomiting now ceased. On the 18th I again saw the patient with Dr. Merrin and found her much improved, although still having a very prominent abdomen, tympanitic all over. Several of the stitches were deeply buried and surrounded by a purplish red margin. The removal of these sutures seemed to relieve the patient a great deal, and moist dressings applied over the wound with very light tamponing of the lower angle seemed to have a good effect. From this date patient passed into the stage of convalescence.

Case VII.—Mrs. L. came to St. Vincent's Hospital, recommended by Mrs. Noble, complaining of having suffered for a long time from constipation. When the bowels were confined she complained of a dragging pain in the neighbourhood of the umbilicus. When medicine acted she experienced severe straining, deep pelvic pain and frequent desire to pass water. She mentioned before I examined her that she had a tumour between the uterus and rectum. On examination I found that she was quite right in the opinion she expressed. A tumour the size of a large orange occupied Douglas's pouch, and the left ovary was enlarged and fixed below the tumour, the pedicle of which was on the right side. After a little manipulation I was able to push the tumour above the pelvic brim, and concluded that it was a tumour in the right broad ligament. Two days later I opened the abdomen, the patient being in the Trendelenburg position. I found the tumour above referred to attached by long bands to the sigmoid flexure of the colon. These I cut between ligatures and the tumour was readily brought through the wound. I removed the appendages on the right side with the tumour, freed the left ovary from its attachments, puncturing at the same time several cysts con-

tained in it. I now closed the abdominal wound, after drawing the intestines into proper position and covering them in front by the great omentum. Recovery was uneventful.

Case VIII.—Miss W. was brought to me by Dr. Thunder, of Newbridge, with the history of long-standing constipation attended with severe pain during evacuation of the bowels. She had, as he explained to me, a displaced right kidney and some obscure pelvic tumour. Assisted by Dr. Thunder and Mr. Reginald White I examined her under ether, and found that her right kidney could be readily pushed downwards and inwards below the umbilicus. A vaginal examination proved that she had a tumour in Douglas's pouch the size of an ordinary egg. The pedicle of this could be felt extending to the right pelvic brim, near which the ovary could be detected in a fairly normal position. The left ovary was enlarged and displaced downwards and inwards and in close contact with the tumour above mentioned. Assisted by Drs. Horne, Thunder, and White I opened the abdomen in the middle line, and found an exceedingly long right Fallopian tube extending outwards towards the right pelvic brim, and then backwards, inwards, and downwards to become lost in the tumour above noted, and which was fixed in the bottom of Douglas's pouch by extensive and well-organised adhesions. The left ovary was adherent to this tumour, and the sigmoid flexure was adherent by a broad band to both. I cut this band between two ligatures, freeing the sigmoid completely. I then detached the left ovary, which was cystic, and opened the cysts. The tumour was freed with great difficulty and drawn into the wound, thus making it easy to remove the appendages on the right side. The operation was completed in the ordinary way. The following is the course of the case:—During the evening the patient complained of severe pelvic pain, which was only slightly relieved by codeïn, but the pulse and temperature were normal, and there was no abdominal distension. We gave her a turpentine and oil injection on the second day, which was followed by some relief. On the seventh day the stitches were removed, and then all distressing symptoms disappeared. She rapidly gained strength, and from being worn and haggard looking she has become plump and comfortable.

ART. X.—*Treatment of Senile Hypertrophy of the Prostate.*[a]
By R. F. TOBIN, F.R.C.S.I.; Surgeon to St Vincent's Hospital, Dublin; Examiner in Surgery in the Royal College of Surgeons, Ireland.

A SPECIAL interest in the diseases of the male genito-urinary apparatus was early carried in upon me by the large number of sufferers from such affections under my care while in charge of the Surgical Division, Royal Victoria Hospital, Netley. This interest has grown with the kind consideration given by this Academy to papers of mine on urethral stricture and prostatic disease. It is therefore that I venture to occupy your attention with a few remarks on the treatment of senile hypertrophy of the prostate. The note of triumph we can now sound over this once terrible enemy of old age makes the task before me a pleasant one. The advance has been so rapid that it is within the personal knowledge of most of us. At present the position may be said to be this—palliative treatment has made great advances. Our knowledge of how to keep the urine aseptic and the excellent catheters now manufactured have made this mode of management both safe and easy; but this, notwithstanding the advance of radical treatment, has been so great and so satisfactory that one can safely advise it, if catheter life is in any way uneasy.

It is of radical measures that I am now about to speak—prostatectomy, vasectomy, and orchidectomy. I wish to define as far as I can the position of each of these operations, and in order to do so it is necessary to say a few words on the functions of the testicles and prostate and the correlation of these organs. As to the functions of the testicles physiologists are pretty clear. As to those of the prostate they are exceedingly vague. I have looked in vain in works on physiology for answers to the questions—of what use is the prostate?—is it, or is it not, an essential part of the sexual apparatus? But surely some answer is necessary; or it is at least well that we should get as near as we can to an answer, before proceeding to discuss measures that interfere seriously with that organ. I am ill qualified to throw light on the subject;

[a] Read before the Section of Surgery of the Royal Academy of Medicine in Ireland, on Friday, February 28, 1902.

but nevertheless you must bear with me while I give expression to definite and dogmatic views, for I hold that "truth comes more easily out of error than confusion," and I wish to promote discussion of this most important matter. I venture, therefore, on the statement that the prostate is an essential part of the sexual apparatus, and that in its absence sexual desire and sexual activity are non-existent.

My reasons are—firstly, that the gland in question is found practically in all animals, and that its size is found to bear a direct relation to sexual desire and sexual power; secondly, does not clinical experience tell us that when in man there is a true hypertrophy of the prostate sexual desire is increased? Do not patients suffering from this condition complain of desire that is excessive, that goes beyond, if I may so speak, the requirements of the situation, beyond the secreting power of the apparatus? On the other hand, when by any disease the prostate is destroyed, desire and action cease. The testicles may retain their secreting power, but to no purpose. Erection and emission no longer occur.

I found this statement on the evidence of many cases, but I shall quote only two. A soldier, who had received a bullet wound that carried away the greater part of his prostate, and was under my care at Netley for a urinary fistula, the bladder emptying itself into the rectum, but whose genital organs were otherwise complete, told me that his sexual passions, which had rather dominated him previous to the injury, were subsequently not existent. No. 2.—A fairly robust man, aged fifty-eight, consulted me lately for urinary trouble. He stated that as his urinary trouble came on his sexual desires ceased. There was an enlargement of the prostate, probably adenomatous, and causing, by pressure, atrophy of that gland. The testicles were healthy, except that the right contained a small spermatocele, which on being tapped yielded fluid containing numerous active spermatozoa.

For further evidence I would refer you to two of the cases recently published by Mr. Freyer, to whom, however we may differ from him on some points, we all owe a debt of gratitude for his demonstrations of the practicability of the cure of a large class of prostatic enlargements by enucleation. The cases I refer to are two, in which patients reported a recovery

of sexual power subsequent to the operation of enucleation to which he had subjected them. Now, as I do not wish to enter into the vexed question of the nature of these operations, I shall at present address myself only to those who believe that when after the operation of enucleation the prostatic urethra is left intact, then the prostate, compressed and atrophied, is also left behind, and that adenomatous masses only have been removed. For such as hold these views, the two cases referred to will, I have no doubt, uphold my contention as to the use and function of the prostate. They will see that coincident with the gland being compressed sexual feelings and powers are in abeyance, and that these feelings and powers return on the pressure being removed. Such occurrence is in accord with what has happened in a case that has come under my own observation; but it seemed to me better to elucidate the point from cases so widely known as are those of Mr. Freyer.

It is not possible in a brief paper such as this to do more than indicate the kind of evidence on which I have founded the views I have ventured to express. Whether they are true or false is, however, all important, and I shall be most grateful for any criticism that will either substantiate or disprove them.

If they are correct, cases of the disturbance under consideration fall readily, both clinically and pathologically, into two classes; and the indications for treatment in each class are clear. First, those in which there is a true hypertrophy of the prostate, with increased activity of its functions; second, those in which the enlargement is due to adenomatous or other non-malignant formations under the pressure of which the prostate has disappeared, and with it what I have declared to be the uses of that gland.

It is to the first class of cases that I believe vasectomy and orchidectomy to be applicable. To such interferences all men have a natural objection; but this, notwithstanding a little consideration, brings us back to them as the proper procedures. For who can study the exhaustive statistics and tabulated cases published by White and others without being convinced that these operations are efficacious as regards the urinary trouble, are safe and simple, and when performed on men of mature years are followed by none of the changes

that characterised them in the case of young subjects. Remember we are now talking only of old men with abnormal sensual appetites. Surely for them, apart altogether from their urinary troubles, repose of the sexual apparatus is indicated. But even if this were not so, what is the other alternative?—complete removal of the prostate. Whether such removal is possible without including the prostatic urethra I shall not pause to consider (my impression is that it is not). I shall content myself with pointing out the great danger of the operation, and the fact that if the prostate is an essential part, the patient is as completely unsexed as if the testicles were removed. Except in urgent cases I think vasectomy should be tried before having recourse to the orchidectomy. It is true that in many cases it fails without apparent cause. And on referring to experiments on animals with normal prostates I find the same uncertainty—viz., that in some cases complete atrophy and in others no change at all occurs (*vide* the report by M. Athanason in the Paris *Journal of Anatomy and Physiology*, March and April, 1898). Seeking for an explanation of this physiological discrepancy, I was lately struck by the fact that the nerves of the prostate came from the hypogastric plexus, while the nerves of the testicle (I quote from Gray) "are the spermatic plexus from the sympathetic. This plexus is derived from the renal and aortic plexus, joined by filaments from the hypogastric plexus, which accompany the artery of the vas deferens."

From this it would appear that if in the division of the vas deferens these hypogastric filaments were included, there would be an interruption of nervous communication between the prostate and testicle, and perhaps in the division and non division of these filaments may be found the explanation of the success and failure of the operation under consideration.

For the second class of cases the operation of enucleation as described by Mr. Freyer is an ideal procedure. The patient is not maimed in any way. An offending growth is removed, and on its removal the parts are free to return to their normal state. It is an operation not difficult of performance, and as a rule the shock and hæmorrhage resulting are small. Let me give you as an instance particulars of a case recently exhibited by me to this Section of the Academy:—

A. B., aged eighty-five, with whom the use of a catheter had long been necessary, was sent to me, at St. Vincent's Hospital, with great distension of the bladder, by Dr. Cosgrove, of Kilcock, whom I know to be one not easily foiled in passing a catheter. On arrival he was delirious, and his temperature was 101°. I had him taken at once to the theatre, and I opened the bladder above the pubis.

I found the prostate, especially the right lobe, much enlarged. He made a good recovery, except that a fistulous opening remained. The dribbling through this caused much irritation of the skin, and he complained of it as a grievous trouble, and as he was a poor old fellow who had no changes of clothes or anyone to look after him, I agreed with him that it was so. Accordingly I took him again to the theatre one day, and enlarging the fistula, enucleated the enlargement in the way Mr. Freyer has described. You see that even as a dried specimen it is of considerable size. On section it is seen to be an adenoid growth. There was a fair amount of hæmorrhage, but with the help of suprarenal extract it was readily controlled. On going to see the patient in the ward some hours after the operation I was shocked to see the sheet drawn over his head. My feelings were changed, however, when on taking it down I found him enjoying a surreptitious smoke. I showed him here a month or so after the operation. He was then able to empty his bladder completely during the day, but unless he was awakened during the night it became distended, and in the morning it was necessary to pass a catheter.

A report to-day from Dr. Cosgrove informs me that even this trouble has passed away, and that he has now normal continence of urine and normal micturition.

This case fully illustrates what an admirable operation is enucleation for the class in which adenoid growths are the cause of the enlargement.

The further question remains is there a third class—cases in which at first a true hypertrophy exists, and in which, ater on, there occur adenoid or other growths owing to the pressure of which the original condition disappears. To this question I can give no answer. I have met no case throwing light upon it. I therefore leave it to you together with the more important one, on the answer to which all scientific interference must hang—Is the prostate an essential part of the sexual apparatus, and what is its true function?

ART. XI.—*Nitrous Oxide and Oxygen as an Anæsthetic in General Surgery.*[a] By VICTOR G. L. FIELDEN, Hon. Anæsthetist to the Royal Victoria Hospital, Belfast, to the Ulster Hospital for Children and Women, and to the Belfast Ophthalmic Hospital.

AT the meeting of the Ulster Medical Society in December, 1901, I showed a portable apparatus for the combined administration of nitrous oxide and oxygen, and very briefly referred to its use. I propose in the present paper to go more fully into the administration of this mixture as an anæsthetic in general surgery.

In text-books, to the question, which is the safest anæsthetic? the answer given is, nitrous oxide. But except in dental surgery this gas is seldom employed, because few operations can be completed in the short period of anæsthesia which it induces. This has been timed (by metronome) by Dr. F. W. Hewitt in 20 cases, and found to vary from 15 to 45 seconds, with an average duration of 30·3 seconds. Dr. Dudley Buxton says the probable available anæsthesia from nitrous oxide is 30 to 40 seconds. Binz quotes 22 to 28 seconds as the figures arrived at by "an English committee."

By administering a little air along with the gas anæsthesia is produced rather more slowly and the resulting duration of anæsthesia is rather more prolonged. Even this is insufficient for most surgical operations. An attempted "continuous" administration of this mixture of gas and air is not quite successful, as can be readily understood when it is remembered that a quantity of inert nitrogen is inhaled. For example, suppose about 7 per cent. of atmospheric oxygen is admitted; this is diluted with about 26 per cent. of inert nitrogen and only about 67 per cent. consists of the active anæsthetic N_2O. As a matter of fact, Dr. Hewitt has shown that dilution of N_2O with 33⅓ per cent. of air—*i.e.*, 7 per cent. of atmospheric oxygen—produces a mixture which is incapable of inducing complete anæsthesia. The introduction of a piece of apparatus by which it would be possible to replace the nitrogen with N_2O, was attempted, and the one I show (the invention of

[a] Read before the North of Ireland Branch of the British Medical Association, on July 17th, 1902.

Dr. Hewitt) is ingenious and excellent. By it N_2O can be given with an amount of oxygen, which can be readily altered at will within wide limits—viz., from nil to considerably over the percentage contained in atmospheric air. Consequently, oxygen starvation, which is the drawback to simple N_2O, is entirely done away with. It proves the falsity of the theory that the anæsthesia produced by N_2O is due to oxygen-starvation of the tissues. Equally untrue is the theory that it is due to increased oxygenation of the tissues by the breaking up in the organism of the N_2O into its elements. In fact, N_2O has a specific anæsthetic effect which differs entirely from the asphyxial anæsthesia which can be produced by the administration of pure nitrogen or hydrogen.

The duration of the anæsthesia produced by the mixture of gas and oxygen may be considered from two aspects—firstly, what is the period of insensibility after the patient has been anæsthetised and the face-piece has been removed, as happens in operations about the mouth? Dr. Buxton gives it as "slightly longer" than with gas alone. Dr. Hewitt carefully timed 69 dental cases, and found the period to vary between 21 and 90 seconds, with an average of 44 seconds.

Secondly, how long can the mixture be continuously given with safety during operations upon other parts of the body than the mouth? One word might be given in answer—viz., indefinitely. Dr. Hewitt has given it for 35 minutes without removal of the face-piece. Claude Martin, of Lyons, administered N_2O with which 15 per cent. of oxygen was mixed for 72 consecutive hours to a dog which suffered no ill effects whatever. In my own limited experience of 28 cases, 7 administrations were for less than 4 minutes, 13 were from 4 to 8 minutes, and 8 were for more than 8 minutes, the longest being for 12¼ minutes. Arrangements have been introduced for administering N_2O, or $N_2O + O$ through the nose, whereby inhalation may be continued during operations about the mouth. I have had no experience of this, so I do no more than mention it.

The time necessary to produce anæsthesia is about two minutes. The operation can be commenced and takes, say, 10 minutes, after which in 44 secs., say a minute, the patient recovers consciousness; that is, that in 13 minutes from the beginning of inhalation the patient is anæsthetised, operated

upon, and wide awake again—a period of time often necessary to administer one of the other general anæsthetics before the operator can commence his work. It will be seen, then, that the saving of time to the surgeon in certain short operations is very considerable when this mixture is employed. Recovery is so complete as well as rapid that the patient will be able to assist, if need be, in the application of dressings, bandages, &c. Again, he is able to rise from the couch or table, should his condition not demand his being in bed, and he is able to adjust his dress and move about almost immediately. The dislike that surgeons have of administering an anæsthetic in their own consulting rooms on account of the time it occupies, and also of the more or less tedious recovery, would be absent were this anæsthetic employed.

Similar precautions are advisable, or indeed necessary, in preparing a patient, when it is possible, as for the administration of chloroform or ether—the recumbent posture should the nature of the operation allow of it, removal of tooth-plates if worn, loosening of the clothing so that the breathing be not hampered, &c.; and as vomiting occasionally occurs it is well, when possible, that no food should have been taken for 3 or 4 hours previously. It may be necessary to insert a mouth prop should there be evidence of difficult breathing, and this is especially so should there be any evidence of nasal obstruction. But should nasal respiration be perfect, the use of a prop is undesirable. Of the different forms of props I need not speak. My only remark concerning them is that to the prop a ligature be attached by which it may be rapidly withdrawn should it happen to fall back into the pharynx or larynx.

The patient is, as a rule, anæsthetised without any trouble except he be very nervous, or by the supervention of involuntary muscular spasm. Rigidity is liable to occur in alcoholics, and may appear in other subjects, but it is not so common as with N_2O alone. Obstructed breathing, which is prone to occur with N_2O in patients with adenoid growths or enlarged tonsils, is much less frequent when the mixture with oxygen is given. Once, in my experience, was the muscular spasm so marked that the operation—cataract extraction—was not attempted, but was subsequently performed under cocain. One other patient showed an unusual condition.

To this young gentleman I gave gas and oxygen on three occasions. On the first, whilst going over and before being touched by the surgeon, he struck out boldly with his hands. He afterwards told us he remembered doing it, but felt impelled to do so. On the second occasion he waved his arms but did not strike, and on the third time he again struck out forcibly. I may here mention that this same patient, several minutes after return to consciousness, on the first and second occasions complained of need of air, but on the third this was absent. The duration of inhalation in the first administration was 11 minutes, on the second 6 minutes, and third 4¾ minutes.

Middle aged and elderly women prove to be the best subjects for this anæsthetic. Weakly males and children also take it well. Indeed, in the case of children it is well always to administer oxygen with nitrous oxide for two reasons—(1) The duration of anæsthesia with N_2O in children is exceedingly short, so that the extended period by the admixture of oxygen is of great advantage; (2) Muscular twitching is marked, if not excessive, under N_2O, and this is reduced to a minimum under the combined administration. Robust adult males may give a little trouble, due to muscular spasm, but I have found that satisfactory anæsthesia may be produced. Alcoholic and obese patients are not good subjects. Men with beards are not so satisfactory from the inability to fit the mask thoroughly to the face. My youngest patient was a boy of 6, and my oldest a man of 81 years. Sixteen patients were males, and 12 were females.

The operations for which this anæsthetic may be employed are legion. My apparatus is fitted with 50 gallon cylinders, and, were all quite full, anæsthesia might be maintained for about half an hour. I have not given it for such an extended period, the operations performed being of shorter duration; for example, the forcible movement of joints, incising and scraping out of suppurating cysts, abscesses, &c., twice for excision of portion of the lobe of the ear, excision of epithelioma of the lower eyelid, circumcision in an adult, excision and suture of external hæmorrhoids, removal of an exostosis of the great toe, removal of wire ligatures from a compound fracture of the tibia, avulsing a finger nail, and such like. I have had only two gynæcological cases, one of curetting and

one of incising and scraping a pelvic abscess through the abdominal wall. One dental case only is included in my list, although I have many times given gas and air for dental and other short operations. The mixture of gas and oxygen has been given for more prolonged operations than the foregoing by other anæsthetists, *notably*, Dr. Hewitt, who can include amputation of the breast, Syme's amputation, lithotrity, excision of varicose veins, &c., in his list. Klikowitsch has employed it in obstetric practice, and also with success for relieving the symptoms of certain diseases, as asthma, angina pectoris, &c.

The *advantages* of this mixture as an anæsthetic in suitable cases are :—(1) Its absolute safety—no death has been reported from its use, and rarely does any cause for anxiety arise. The N_2O itself possesses no irritant action upon the lungs, kidneys, or intestinal tract, and is a cardiac stimulant, whilst the oxygen overcomes any tendency to untoward symptoms due to de-oxygenation of the blood and tissues. Dr. Geo. Oliver has estimated the effect of N_2O, alone and combined with oxygen, upon the arterial calibre. He finds that "nitrous oxide causes a slight expansion, followed by a reduction either to the normal calibre or to a point or two below it; the latter, however, fails to take place when the gas is inhaled along with oxygen," and concludes from his observations that this mixture is the safest anæsthetic for short operations, maintaining, as it does, the heart's action and the fulness of the arteries.

(2) From the lack of strain upon the heart and circulation it is eminently suitable in cases of *morbus cordis*.

(3) The diminution or absence of embarrassed breathing which is prone to result with nitrous oxide alone in patients with enlarged tonsils, adenoids, &c.

(4) The rapidity with which anæsthesia is produced and with which recovery takes place, allowing of the completion of a short operation in the time frequently necessary to induce anæsthesia with one of the other general anæsthetics.

Its *disadvantages* are :—(1) Its inapplicability for operations which produce a profound impression, due to the fact that the anæsthesia is light.

(2) The risk of either of the gases running short in a portable apparatus, large quantities being necessary to maintain anæsthesia for a prolonged period.

(3) The muscular spasm which may occur in certain subjects.

(4) The liability of venous oozing to occur in a wound. This was noticed by my friend Dr. Mitchell, and might possibly have been caused by the percentage of oxygen in the mixture being rather low.

After-effects are not severe, although rather more liable to occur than after N_2O alone. This may be due to the fact that as the administration is longer, larger quantities are inhaled. I have already referred to vomiting as an after-effect. This, or simply nausea, may result from the swallowing of some of the gas by a nervous patient. In one of my cases, the patient had had chloroform three weeks previously, and had suffered from sickness for three days after it. After nine minutes' inhalation of gas and oxygen for the removal of wire sutures from a severe compound fracture of the tibia he recovered completely without any sign of nausea or vomiting. Twice I have seen vomiting occur, both in men. In one it was slight, but in the other case the patient, contrary to advice, had eaten a hearty dinner an hour or two before, and after an administration of 7½ minutes vomited very freely. One female retched twice, but did not vomit on recovering consciousness. About five hours later, however, she vomited, but I can hardly blame the anæsthetic for that. I have also referred to a patient who after two out of three administrations complained of need of air several minutes after return to consciousness—indeed on the first occasion it was only after I had left the house (probably 10 or 15 minutes) that he complained. Faintness, headache, and vertigo occasionally occur, and Dr. Hewitt has seen transient maniacal excitement occur in three men of powerful build.

To summarise—(1) A mixture of nitrous oxide and oxygen constitutes an excellent anæsthetic for short, painful examinations, dressings and operations.

(2) The dangers are practically nil.

(3) After-effects, if any, are very slight.

(4) Anæsthesia is rapidly induced, and the recovery to perfect consciousness is even more rapid.

(5) The patient is able to move about almost immediately, so that it is the best anæsthetic to administer when one is desired in the surgeon's consulting-room.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

The Study of the Pulse, Arterial, Venous and Hepatic, and of the Movements of the Heart. By JAMES MACKENZIE, M.D. Edinburgh and London: Young J. Pentland. 1902. Pp. 325.

IN this remarkable work the author gives some of the results of his inquiries into the phenomena presented by the heart and vessels in various conditions of health and disease. His conclusions are founded mainly on graphic records of the cardiac impulse, and of the arterial and venous pulse, including in the latter the pulsations of the liver. The experience of the writer has been very large, and the entire work is characterised by great ingenuity and acuteness in reasoning. The graphic records, particularly those of the venous and liver pulses, are wonderfully successful, which speaks for the skill of the observer, all the more as they have been made with apparently very simple appliances. While we cannot help thinking that in some cases the tracings are made to show more than can certainly be deduced from them, we must admit that the writer's arguments are always suggestive and interesting, and in many cases seem to be conclusive.

The work is divided into three parts—I. The arterial pulse and movements of the heart; II. Pulsation in the veins and liver; and III. The venous and liver pulses in irregular action of the heart. Each part is divided into several chapters, and the chapters into numbered paragraphs. The subjects of the paragraphs are printed at the head of each chapter so as to greatly facilitate reference.

It would be impossible to follow the author through all his work, the number of subjects dealt with is so great, and the arguments and conclusions would be difficult to follow without a constant reference to the tracings on which they are founded. We may, however, notice a few of what appear to us to be the most interesting subjects discussed.

The subject of irregularity of the pulse is one which has evidently received great attention. It is divided into two types, which are named respectively the youthful and the adult. In the former, occurring mostly before puberty, it is found that the duration of the ventricular systole is constant, and the irregularity is due solely to variations in the time of diastole. In the latter, occurring later in life, the irregularity is due to the occurrence of a premature systole of the ventricle, which is shorter than a normal systole, and is followed by a long, so-called compensatory pause. The youthful form of irregularity is very prone to occur under two conditions—firstly, when the infantile rapid pulse is slowing into the youthful rate, and, secondly, when the pulse is slowing after fevers. The adult type may occur under many conditions, in some of which it may have little significance, while in others it may be of the most serious import. These are fully discussed, and the chapters dealing with them are among the most important in the book. It is only by considering the other circumstances of a case, more particularly the degree to which the field of cardiac response is contracted—that is, the amount of exercise which produces cardiac distress, that the import of irregularity can be judged of. Every clinical observer will endorse this rule—"Never depend upon the pulse alone in estimating the value of its abnormality."

The principal value of Dr. Mackenzie's work, however, lies in his study of the venous pulse. This has been strangely overlooked by previous writers, and many erroneous statements have been made concerning it. The neglect and misconceptions have arisen from the difficulty of the study, which can be made only by the graphic method, and this is attended with great technical difficulties. It is very remarkable how successful Dr. Mackenzie has been, the more so when we consider the method by which he worked. Indeed we cannot fully understand how he has got records of the jugular as distinct from the carotid pulse with the instruments he describes and figures at page 9. It seems to us that his cup-shaped receivers must in all cases have covered both artery and vein, and furthermore, that the edges of the receivers must have compressed the vein so as to deform its

movements. However, we have tracings by the hundred of great beauty and apparently trustworthy, so that the skill and patience of the observer must have vanquished the difficulties we have noticed.

When a venous pulse is visible in the jugular veins it is an evidence of increased engorgement of the right side of the heart, due generally to tricuspid regurgitation. The venous curve shows two cusps, one caused by the contraction of the auricle, a second occurring during the end of the systole of the ventricle, after the closure of the pulmonary valves, but before the opening of the auriculo-ventricular valves—in other words, during what the author calls the post-sphygmic period of the ventricular systole, or that period when the ventricle is still contracted and is cut off from communication with the arteries. This second cusp is caused by the accumulation of blood in the auricle. The two cusps are separated by a depression due to the influx of blood into the auricle during the early part of its diastole. It is pointed out that the tracings of the venous pulse are really but diagrammatic representations of the variations of pressure within the auricle. In cases of slight engorgement of the right auricle, the first or auricular cusp is always the most marked feature in the curve; but as the engorgement increases the second or ventricular cusp appears before the closure of the pulmonary valves, and increases in size by encroaching more and more on the depression due to the auricular diastole. When the auricular cusp has entirely disappeared the distension of the walls of the auricle has reached such a degree that they are no longer able to contract. "A venous pulse entirely due to the ventricular systole is an evidence of paralysis of the auricle."

When the liver pulse and venous pulse are present at the same time, they are always of the same type. While the ventricular type of venous pulse is always indicative of serious and permanent engorgement, the auricular type must be judged of by the condition of the heart which gives rise to it. This may be such as to cause only temporary stagnation in the right cavities, as in anæmia, pregnancy, or typhoid fever, or an irreparable condition, such as incurable degeneration of the muscular tissue. In mitral disease the relative

sizes of the auricular and ventricular cusps may indicate the amount of regurgitation.

In cases of irregularity of the arterial pulse a study of the pulse in the veins will show whether the irregularity of action involves the ventricle alone, or whether the auricle also is acting irregularly.

In conclusion, we would say that this book deserves the most careful study by all interested in cardiac pathology. It is, in our opinion, one of the most important works that has appeared on the pulse, and, as such, we cordially recommend it to the notice of our readers.

Outlines of Practical Physiology. Being a Manual for the Physiological Laboratory, including Chemical and Experimental Physiology, with reference to Practical Medicine. By WILLIAM STIRLING, M.D., Sc.D. Fourth Edition. Revised and Enlarged. London: Charles Griffin & Co. 1902. Pp. 624.

WE have much pleasure in calling the attention of our readers to the appearance of the fourth edition of this useful and popular book. There is probably no other work in any language which is so complete, containing as it does directions in chemistry, experimental physiology, and clinical experimental work, such as sphygmography, cardiography, and experiments on the special senses.

While the general plan of the book remains the same as in previous editions, the text has undergone a thorough revision, and much new matter has been added. All the best methods described in other works on practical physiology have been incorporated, and many original exercises are given. All the more recent methods of investigation are described, such as cryoscopy, as carried out by Beckmann's instrument

The sections on the senses have undergone great expansion, by which the author has obviated the necessity for separate chapters on physiological psychology. References to the literature of each subject are given, and useful bibliographical lists and many valuable tables are given in the appendix. The text is profusely illustrated by drawings of instruments,

diagrams of experiments, microscopic appearances, and other things. The number of illustrations is 465, nearly double that which was contained in former editions. The makers of the various instruments figured are given in almost every case. This will be useful to all those who have charge of physiological laboratories. Indeed to all those who are working in such institutions, whether as teachers or students, this book will be almost indispensable, while it contains much that will interest everyone who wishes to know how physiological processes are investigated, although he may not be himself engaged in such investigations.

The Practitioner's Handbook of Diseases of the Ear and Naso-Pharynx. By H. MACNAUGHTON JONES, M.D., F.R.C.S.I. and Ed. London: Baillière, Tindall & Cox. 1902. Demy 8vo. Pp. 368.

THIS book, first published in 1878, has now reached its sixth edition, which in itself is a sufficient proof of its hearty reception. The author has not undertaken the whole of the work, but has divided it up between six writers, many of whose names are well known as excellent authorities on their special subjects.

As will be gathered from the superscription, the book is intended for the general practitioner rather than for the specialist, and it must be admitted that this aim has been carefully kept in view all through the book. Nothing fulsome or adventitious has been inserted; every line has something to explain, and padding is absent.

The chapter on anatomy is good, the explanations are clear and not so elaborate as to render their meaning doubtful. Further on, the methods of examination and treatment are short and useful; the best is inserted, and doubtful points not raised.

In the chapter on catarrh of the middle ear the subject of sclerosis is rather short, when one considers the difficulty of treatment and prognosis in this troublesome affection.

The chapter on suppurative disease includes a short account of the various operative procedures usually undertaken, and deals with the inter-cranial complications as fully as could be

expected in a work of this size; and, as showing that it is up-to-date, a short account of Ballance's skin-grafting operation on the mastoid is included.

The account of the internal ear is particularly good, and the subject of tinnitus is fully dealt with. This portion of the work will undoubtedly prove of use to many, as it is a subject which has in times past not received the attention it deserved, when its widespread character is considered.

A short account of the nasal affections which are likely to come into relation with aural disease is included and their treatment is indicated. Anæsthetics are touched upon, and a few words are said about deaf-mutism.

On the whole the book must be highly commended, and will be certain to repay the reader for his trouble. It is sufficiently simple to be recommended to advanced students, if they take an interest in ear work, which latter is, as a rule, not an attribute of the average student.

Introduction à l'Étude de la Figure Humaine. Par le Docteur Paul Richer, de l'Académie de Medécine. Paris: Gaultier, Magnier et Cie., 55 Quai des Grands-Augustins; 7 Rue Bonaparte. 1902.

In this beautifully-printed and artistically-bound octavo of 190 pages, Dr. Richer treats his readers to an excellently-written and well-thought-out introduction to a subject of surpassing interest; which, as he well points out, has not hitherto been placed on a scientific basis. In alluding to this subject twelve years ago, Dr. Richer observed that "La morphologie humaine est moins précise et moins connue que la morphologie du cheval." He now proposes to follow this introduction by other volumes which shall embody all the available facts relating to this subject, and thereby place it in the scientific position to which it is worthily entitled. The human body as a whole, and in its various constituent parts, as demonstrable by external observations, is here examined with critical care and scientific accuracy. The various contributions of the most famous artists—painters, sculptors, physiognomists, phrenologists, and photographers—are arranged and judiciously criticised. The relationship between art and

science, the established "canons" of each, the study of the sublime and the beautiful in their relationship to the human frame, the development of plastic anatomy and of artistic physiology, the revelations of instantaneous photography, and the conveyance of all towards the development of the ideal, are all here collected and examined with masterly skill. We thank the author cordially for the treat which he has given us, and will eagerly look forward to the perusal of his future volumes.

Selected Essays and Addresses. By SIR JAMES PAGET. Edited by STEPHEN PAGET, F.R.C.S. London, New York and Bombay: Longmans, Green & Co. 1902. 8vo. Pp. viii and 445.

By the preparation of this handsome volume Mr. Stephen Paget has made his professional brethren permanently indebted to him for convenient reference to the best contributions which were made to professional science and literature by his illustrious father. It need hardly be pointed out to any of our readers that Sir James Paget was, and will always remain, one of the most representative pioneers of surgery in the most progressive era of its development—the nineteenth century. Everything that dropped from his pen should be read, marked, learned, and inwardly digested by every true student of his profession. In the volume before us, "None of his earlier lectures on pathology are included; there is, indeed, nothing more here than such a selection of Sir James Paget's writings as any of his pupils might wish to have made in honour of him and for love of him." The volume so prepared includes twenty-four items, of which we will name the titles:—"Senile Scrofula," "Cases that Bone-setters Cure," "On Stammering with other Organs than those of Speech," "What becomes of Medical Students," "Sexual Hypochondriasis," "On Dissection-Wounds," "Nervous Mimicry," "On Diseases of the Mammary Areola preceding Cancer of the Mammary Gland," "On a Form of Chronic Inflammation of Bones (Osteitis Deformans)," "Hunterian Oration (1877)," "On some of the Sequelæ of Typhoid Fever," "Anæsthetics: the History of a Discovery," "Elemental Pathology," "Theology and

Science," "Presidential Address at the Opening of the International Medical Congress, 1881," "The Contrast of Temperance with Abstinence," "Experiments on Animals," "Some Rare and New Diseases," "National Health and National Work," "Periostitis following Strains," "Spines suspected of Deformity," "Obscure Cases of Caries of the Spine," "Errors in the Chronometry of Life," and "Use of the Will for Health." After expression of the opinion which we have already enunciated, it is hardly necessary to add that we decline to criticise in detail any one of these contributions to surgical knowledge, made by one of the most eminent members of our profession of whose memory his country can boast. We only desire that every one of our readers will study them with the care they deserve.

Christian Science, Medicine and Occultism. By ALBERT MOLL, M.D., Berlin. Only authorised translation from the German. By F. J. REBMAN. London: Rebman, Limited, 129 Shaftesbury-avenue, W.C. 1902.

THE distinguished author of this octavo booklet (of 47 pages of text) here places before the professional public the essence of the first-hand information on the much-discussed subject of Christian Science, which he obtained while travelling in the United States some four years ago. In the trans-Atlantic native land of this latter-day method of neutralising the ills to which human flesh is heir, the question which was oftenest asked of Dr. Moll inevitably was, "What do you think of America?" and the query which took second rank in point of frequency was, "What is your opinion of Christian Science?" And, turning from the consideration of the melancholy condition of popular scientific opinion in America to that of Western Europe, he observes with philosophic truthfulness—"Psychical epidemics naturally find the same fertile ground for development in Germany as in the United States or in England, or any other country, since all nations consider themselves the most enlightened, and look upon others with a certain disdain. He alludes with regret to the gullibility displayed by the enlightened public of the Prussian metropolis in 1849; who, whilst sneering at the sacred tunic of Treves,

allowed themselves to be duped by a girl scarcely thirteen years of age." He tells us of the origin of Christian Science therapeutics with Mrs. Eddy—probably in 1866, of the issue of her great text-book in 1875, and of its 175th edition in the course of 24 years. He tells us how Christian Science undertakes the cure of all diseases. Then that "An American doctor has offered a premium of 1,000 dollars to anyone who can prove that in a single instance through the instrumentality of Christian Science a congenital malformation has been corrected." Another medical man has proposed to inject a lethal dose of poison into a follower of Christian Science to see it counteracted by faith cure. No one seems to have accepted these challenges. We need not pursue our criticism further.

Saunders' Year-book of Medicine and Surgery: being a Yearly Digest of Scientific Progress and Authoritative Opinion in all branches of Medicine and Surgery, drawn from Journals, Monographs, and Text-books of the leading American and Foreign Authors and Investigators. Collected and arranged, with critical editorial comments, under the general editorial charge of G. M. GOULD, M.D. *Medicine.* London and Philadelphia: W. B. Saunders & Co. 1902.

IN this portly royal octavo of 715 pages the reader will find a very excellent summary of the progress of medical science during the past year. Nothing, in our judgment, can well exceed the discriminating skill and care with which the editor and his staff have selected and prepared their material. Nothing of any importance has been omitted; and, accordingly, this is a volume which every medical practitioner can use with confidence, as representing the results obtained by all professional investigators during the annual cycle of 1901. The printers, binders, and publishers have, each in their respective domains, fully contributed to the making of this volume as near an approach to an ideal of its kind as we can well conceive. We cordially thank Messrs. W. B. Saunders & Co. for the instructive treat which they have given us; and congratulate them most warmly on the success which they have attained in the preparation of another of the handsome volumes with which they have decorated our library shelves.

PART III.

SPECIAL REPORTS.

REPORT ON PRACTICE OF MEDICINE.

By HENRY T. BEWLEY, M.D. Univ. Dubl.; F.R.C.P.I.; Physician to the Adelaide Hospital; and Lecturer on Forensic Medicine and Hygiene, Trinity College, Dublin.

I. PULMONARY INCOMPETENCE IN MITRAL STENOSIS.
II. BABINSKI'S TOE PHENOMENON.
III. LATENT PNEUMONIA.
IV. INTERMITTENT CLAUDICATION.
V. GREEN AND BLUE URINE.
VI. BANTI'S DISEASE.
VII. OSCILLATION OF THE HEAD IN AORTIC DISEASE.
VIII. THE BLOOD IN APPENDICITIS.
IX. THE ORIGIN AND PREVENTION OF DEPOSITS OF OXALATES IN THE URINE.
X. USE AND ABUSE OF DIGESTIVE FERMENTS.
XI. THE VALUE OF HEROIN.
XII. ADRENAL EXTRACT AND HÆMATEMESIS.
XIII. APOMORPHIN IN HYSTERIA.
XIV. MENTHOL AS PALLIATIVE OF COUGH.
XV. USE OF SULPHOCARBOLATES.
XVI. PITUITARY GLAND IN ACROMEGALY.

I. PULMONARY INCOMPETENCE IN MITRAL STENOSIS.

DR. J. H. BRYANT has collected notes of pulmonary incompetence and of dilatation and atheroma of the pulmonary artery as complications of mitral narrowing. He says: "I have never performed, or seen performed, a *post-mortem* examination on a case of advanced mitral stenosis without finding thickening, dilatation and atheroma of the branches of the pulmonary arteries in the lungs," and there was also evidence that the pulmonary orifice was dilated.

It has been known since the days of Hunter that the pulmonary sigmoid valves do not do their work as well as the aortic valves, and more recently Gibson (*Edinburgh Med. Journ.*, Vol. XXV., p. 979) has shown that the former valve cannot competently hold a column of water higher than six inches, whilst the aortic valve is competent up to twice the pressure. Gibson also found that the pulmonary valve became quite competent under higher pressure, of even 72 inches, if it was constricted slightly by a cord tied round the artery exactly at the level of the valve.

The most important physical sign of functional pulmonary incompetence is the presence of an early diastolic murmur, which is most frequently heard in the third left intercostal space, midway between the left sternal line and the left nipple line; but it may be heard in the second or fourth spaces in the same line. Some physicians are of opinion that this early diastolic murmur heard in the above-mentioned situations is created at the mitral valve itself. Bryant considers this interpretation to be most unlikely, for he has never heard the crescendo or mid-diastolic bruits produced at the mitral valve in these spaces, and he cannot see how a stenosed mitral valve could produce an early diastolic murmur in this position.

Mitral stenosis, without doubt, is very occasionally indicated by an early diastolic murmur at the point of cardiac impulse, and between the impulse and the left border of the sternum; but there does not seem any justification for interpreting the early diastolic murmur, which is audible most frequently in the third left space midway between the left border of the sternum and the left nipple line, as being the direct result of the mitral lesion. That this murmur is the result of dilatation of the pulmonary artery and functional incompetence, is a much more satisfactory explanation, and it is borne out by the very definite morbid changes which are found in the pulmonary artery and its branches in necropsies on advanced cases of mitral stenosis.

In the concluding remarks it is pointed out that although there may be a distinct murmur indicative of functional pulmonary regurgitation during life, the *post-mortem* examination may fail to show any incompetence of the valves or dilatation of the pulmonary artery, but that this absence of *post-mortem*

evidence of regurgitation in some cases is no proof that the incompetence did not exist during life. This is because the elasticity of the pulmonary artery has not been permanently injured by the increased pulmonary tension, and that as soon as the tension is relieved the vessel contracts to its normal size—*Guy's Hospital Reports*, Vol. LV.; and *Med. Chron.*, Sept., 1901.

II. BABINSKI'S TOE PHENOMENON.

Schneider (*Berlin. klin. Wochenschrift*, 1901, XXXVIII., 946), as a result of observations in a variety of different conditions in the Clinic of Professor Jolly, comes to the following conclusions :—

The normal reflex movements on irritation of the sole of the foot consist of two reflexes which arise from different points in the central nervous system. The first, simple plantar flexion following a weak stimulus, is a cortical reflex. The second, dorsal flexion of the toes with combined movement of the leg on strong stimulus, is a spinal reflex.

Babinski's phenomenon consists in the fact that, upon a feeble stimulus, plantar flexion does not follow, while dorsal flexion of the toes—that is, a spinal reflex—immediately appears. That this is more easily obtained than under normal circumstances depends always upon a general increase of the spinal reflexes.

Babinski's phenomenon may arise in two ways. First, through interruption of the pyramidal tract, and consequent obliteration of the cortical reflex ; this interruption may also occur at the beginning of the tract—that is, the motor cortex (epilepsy). This reflex, depending upon organic changes, the author describes as " genuine."

Secondly, if, as a result of general increase of the spinal reflexes (strychnin, diseases resulting in increased reflexes without lesions of the pyramids), or from conditions which diminish the reflex irritability of the cortex (stupor, œdema), the spinal reflex becomes as easily or more easily obtainable than the cortical reflex, then as a result of the dynamic excess of the spinal reflex the cortical reflex may be suppressed and apparently wholly wanting. Thus the typical picture of Babinski's reflex may arise without lesion of the pyramidal tract.

We are not in a position to separate positively this variety of Babinski's phenomenon, with suppression of the cortical reflex, from that with destruction of the cortical reflex; it is then impossible, in a condition of general increased reflex irritability, to make the diagnosis of a pyramidal lesion from Babinski's phenomenon alone. However, permanent persistence of Babinski's phenomenon is rare, without destruction of the cortical reflex (a single plantar flexion among a large number of dorsal flexions shuts out a genuine Babinski reflex); and since the genuine Babinski's phenomenon is present or develops almost always in lesions of the pyramidal tract, this reflex is of practical value in separating pyramidal lesions from similar pictures.—*Amer. Jour. of Med. Science*, Jan., 1902.

III. LATENT PNEUMONIA.

In an article in the *Edinburgh Medical Journal* for March, 1902, Dr. Harvey Littlejohn comes to the following conclusions:—

1. Pneumonia may be completely latent during its whole course.

2. The form of the disease most liable to be latent is basal lobar pneumonia.

3. Alcoholic apical pneumonia is rarely latent during its whole course.

4. The disease may be latent, even although the whole of one lung or a considerable portion of both lungs is affected.

5. In latent pneumonia, sudden death most commonly occurs during the stage of grey hepatisation.

6. The condition is practically confined to persons addicted to excessive alcoholic intemperance.

7. Complete consolidation of the whole of one lung is not inconsistent with a person having continued to lead an active life up till the time of death.

8. Latent pneumonia is most frequent as a cause of sudden death during the winter months.

9. It is most common after the age of 40 and in the male sex.

10. The explanation of "latency" is to be found in the quantity of alcohol consumed after the onset of the disease—first, in masking the ordinary signs and symptoms by dulling

sensibility; second, by its stimulating effect, thus enabling the person to go about until he suddenly collapses and dies.

11. In medico-legal cases the discovery of latent pneumonia may satisfactorily explain the death of an individual, and thus allay all suspicion connected with the case.

12. On the other hand, the existence of pneumonia, even in an advanced stage, will not preclude the possibility of an individual having died from other causes, natural or violent, and of his having been, at the time of receiving an injury, in a state of apparent good health.

IV. ANGINA CRURIS (INTERMITTENT CLAUDICATION) AND ALLIED CONDITIONS, INCLUDING PAINFUL CRAMPS, WITH REMARKS ON THE IMPORTANCE OF EXAMINING THE PEDAL ARTERIES.

Walton and Paul (*Boston Medical and Surgical Journal*, April 3, 1902, p. 351), in a very interesting paper, suggest the name *angina cruris* for the group of symptoms first described by Charcot in 1858, and usually known under the name of "intermittent claudication." They refer to the various other names that have been applied to the affection, and state that they are misleading, in that they unduly emphasise an unessential feature of the disorder (lameness), while drawing no attention to the essential symptom—namely, intense paroxysmal pain.

According to the writers, the clinical picture of well-developed angina cruris consists of more or less frequent brief attacks of intense paroxysmal pain in the leg, affecting, as a general rule, the same region, oftenest the calf, recurring at irregular intervals, generally when in the erect position, but not infrequently while the patient is in bed. The condition is usually accompanied by local asphyxia and cyanosis, and usually in a limb in which pulsation is wanting in the dorsalis pedis or the posterior tibial, or both. The attack resembles in its severity that of painful facial tic. The various causes that have been advanced to explain the group of symptoms are discussed, but the writers favour Goldflam's view that the pain is of vascular origin, conveyed, perhaps, as Goldflam suggests, from the sensory corpuscles in the vessel walls.

The comparative frequency of the condition has been recently illustrated by the fact that Higier, Goldflam, and Hagelstam

have reported 18, 24, and 23 cases, respectively. These authors believed that certain races—for example, the Semitic—were peculiarly subject to the complaint.

During the past few months Walton and Paul have observed one typical and fifteen other cases representing a modified type of the disease. They are evidently inclined to the view that many cases of recurring local cramps properly belong to this condition, particularly when associated with vascular changes.

The cases heretofore reported have been largely in males. Nine of the cases here reported occurred in women, however. As to the ætiology of claudication, two factors appear with great frequency throughout the literature—namely, a tendency to defective circulation and a constitutional neuropathic taint. An important feature of many of the published cases has been the obliteration of the pulse in the superficial arteries of the affected extremity. It is of interest that the writers found that the blood pressure was markedly increased in the toes on the involved side during the spasms of pain.

The following conclusions are drawn :—

1. The concurrence of the paroxysmal pains of angina cruris with pulseless pedal arteries is too constant to be explained by coincidence, though it is true that pulseless arteries may be found without the pains, and, conversely, that such pains may appear with apparently normal arteries.

2. The painful paroxysms are probably of vascular origin, and result from vascular spasm, coupled, perhaps, with increased blood pressure acting on vessels already partially occluded, whether from local or general disease (aneurysm, syphilis), from senile changes (atheroma), or from congenital tendency to angiofibrosis.

3. Recurring painful cramps of constant seat probably represent a modified form of angina curis.

4. It is important to examine the dorsalis pedis and posterior tibial as well as the radial and temporal arteries in all cases in which it is desirable to estimate the bearing of the vascular condition upon disease in the central nervous system or elsewhere.—*Amer. Jour. of Med. Science*, July, 1902.

Osler contributes a paper to the *Montreal Medical Journal*

of February, 1902, on the same subject. The disease is characterised by the fact that the patient when he sets out to walk is perfectly well. After going for a certain distance, which, of course, varies in different cases, the legs become weak, so that, as one man expressed it, "he could not move another step; he had to sit down." After resting a few minutes power returns, and the patient can resume his walk, only again to fail as before. Osler believes that this phenomenon is due to a pathologically diminished blood supply to the legs. While the patient is at rest the amount of blood supplied is sufficient for the needs of the part, but on exertion the amount of blood is not sufficient, and the muscles become unable to work. "The supply of energy and the expenditure do not balance each other."

The cause in one of his cases was an aneurysm of the abdominal aorta; in the other there was general arterio-sclerosis.

Pain is often felt in the legs; the skin may be cyanosed or not. Pulsation has often been noted absent in the dorsalis pedis and popliteal arteries.

As regards treatment, he recommends rest in bed, warmth, careful friction, and full doses of nitroglycerine.

V. ON GREEN AND BLUE URINE.

Ralph Stockman (*Ed. Med. Jour.*, Aug., 1902) calls attention to the fact that urine is sometimes blue or green in colour. Sometimes this phenomenon is due to the presence of indigo in the urine; the indigo may be introduced into the system through the mouth, as in the case of a child who sucked a cloth dyed with indigo, and passed green urine in consequence. In other cases the indigo is derived from indican under the action of bacteric and other conditions.

More usually, however, blue or green urine is due to the ingestion of methylene blue; the drug may have been given medicinally, or may have been taken unwittingly in the form of sweets coloured with methylene blue. In one of his cases it had been given to the patient as a practical joke.

Methylene blue urine is strongly acid; under the action of bacteria it decolourises rapidly, except on the surface which was exposed to the air. On shaking up such colourless urine it absorbs oxygen from the air and becomes green in colour, a reaction which can be repeated indefinitely.

In the clear blue specimens, chloroform and amylic alcohol washed out the blue pigment completely, leaving the urine practically colourless; in the purely green specimens no colour was yielded on shaking with chloroform or with amylic alcohol; in the mixed specimens these menstrua dissolved out the blue pigment, leaving the urine a light or deep green colour. Ether dissolved out neither the green nor the blue substance.

Examined with the spectroscope, the blue urine and the blue solutions in chloroform and amylic alcohol gave a deep defined band in red, the green urine (if quite free from blue pigment) simply obscured the extreme red and violet ends of the spectrum, and, if it contained blue pigment, gave the dark band in red in addition. On standing, the chloroform and amylic alcohol solutions gradually fade to yellow and lose their characteristic spectrum.

Whether the urine was blue or green, it became pinkish red on boiling with a few drops of hydrochloric or nitric acid, but after standing for five to thirty minutes, it gradually became of a deep green tint; the green colour developed at once on neutralisation with soda solution. The addition of caustic soda or potash decolourises the urine at once. The addition of a large quantity of nitric acid changes the blue colour to green, and this, or a urine originally green, fades momentarily, regaining at once a green colour, which deepens on boiling. Hydrochloric acid in the cold made the blue urines paler, but left the green practically unchanged.

Hydrochloric acid and chlorine water causes bleaching; but if the mixture be shaken up with chloroform at the same time the results vary a good deal. Sometimes the urine becomes bleached and colourless, sometimes the chloroform becomes of a blue tint, and sometimes a rich purple. These differences evidently depend on the amount of chemical change induced in the original pigment by the reagents used.

VI. ON BANTI'S DISEASE.

In 1894, Banti described what he believed to be a new type of disease, characterised by enlargement of the spleen with anæmia, which symptoms were subsequently followed by cirrhosis of the liver and ascites.

In this disease there are three stages. In the first, the spleen is enlarged and there is anæmia; this stage may last for years. The second stage lasts only some months; in it the urine is lessened in quantity, slight jaundice occurs, and digestive disturbances are frequent. The third stage rarely lasts over a year, and is characterised by diminution in the size of the liver and by ascites.

In 1898, Banti published three more cases, two of which were cured by removal of the spleen.

The causation of the disease is unknown; it is believed not to be due to syphilis, malaria, alcohol, or other chronic intoxication.

Senator considers all cases belong to this category in which enlarged spleen, anæmia, and ascites exist, even though cirrhosis of the liver be absent. He called attention to the hæmorrhagic tendency and leucopenia.

Chiari (*Prag. med. Wochenschr.*, 24, 1902) relates four cases which clinically resembled this disease, but in which the symptoms were probably due to late hereditary syphilis.—*Deutsche med. Zeitung*, July 21, 1902.

VII. RHYTHMICAL OSCILLATION OF THE HEAD IN DISEASES OF THE AORTA (MUSSET'S SIGN).

Rhythmical nodding of the head, either backwards and forwards or else from side to side, has been observed in aortic regurgitation and in aneurysm of the aorta. The movement appears to coincide with the cardiac systole. It has been observed once in a case of pleurisy, but in all other recorded cases there was aortic disease.

Frenkel and Lafon, with a recording instrument, investigated the question whether this sign is found in healthy individuals, and came to the conclusion that it does so exist; but that in aortic disease the oscillations are much greater in amplitude than in health, and that thus a distinction can be easily established.—*Deutsche med. Zeitung*, July 10, 1902.

VIII. THE BLOOD IN APPENDICITIS.

J. C. Da Costa, jun. (*Amer. Journ. Med. Sci.*, 1901, Vol. CXXII., p. 645).—The results arrived at by the writer were obtained from a study of 118 case of appendicitis, 38 of which

were instances of simple catarrhal or interstitial inflammation, while in the remaining 80 there was more or less extensive pus formation. The features of the blood changes of greatest clinical interest were the anæmia and the behaviour of the leucocytes. Some degree of *anæmia* was found in practically every case, the hæmoglobin falling on the average to about 70 per cent. of the normal, though some cases were met with in which it was below 50 per cent., and in three cases it fell even below 40 per cent. The number of red corpuscles was diminished to a less degree than the hæmoglobin, the loss being on an average rather more than half a million. The anæmia of appendicitis is therefore seen to be of the ordinary secondary type, and the colour index of the individual corpuscles was below normal—70 to 80 per cent.—in the great majority of cases. The degree of anæmia was about the same in the catarrhal as in the suppurative cases. Probably the fact that the majority of the non-suppurative cases were of a chronic character, occurring in patients whose constitutions, undermined for a long period, were greatly debilitated, may serve to explain the frequency of anæmia in this variety of disease.

The writer comes to the following conclusions as regards the *leucocytes* in appendicitis:—Moderate leucocytosis may occur both in the absence and in the presence of an abscess and its consequences. It accompanies about 35 per cent. of non-purulent and 90 per cent. of purulent cases. Leucocyte counts ranging between 10,000 and 15,000 or 17,000 cannot be depended on to reflect the nature of the local lesion, since this degree of increase may be found both in mild catarrhal and in purulent cases. Counts of 20,000 or more almost invariably indicate the presence of pus, gangrene, or general peritonitis, one or all. Leucocytosis may be absent both in trivial catarrhal and in fulminant cases, as well as in forms of circumscribed abscess. In a patient unmistakably septic, absence of leucocytosis should be interpreted as a sign of an intense infection with complete failure of reaction, the prognosis of which is more likely grave than favourable. A high leucocytosis in such instances does not necessarily indicate a favourable prognosis, but simply represents an intense infection, coupled with normally active resisting powers on the

part of the patient. Absence of leucocytosis in a patient with mild, indefinite symptoms, is a clinical sign of no tangible value, in so far as it may serve in detecting the presence of pus, since a large abscess, if thoroughly circumscribed, may exist without causing the slightest increase in the number of leucocytes. In operative cases thorough evacuation of the abscess is followed within a few days by a decline to normal in the number of leucocytes, provided that the recovery of the patient is uneventful. Persistence of a leucocytosis after the third or fourth day following the operation may usually be attributed either to undrained pus pockets, to general peritonitis, or to both these factors.—*Med. Chronicle*, Jan., 1902.

IX. THE ORIGIN AND PREVENTION OF DEPOSITS OF OXALATES IN THE URINE.

Bearing in mind the fact that from 30 to 50 per cent. of all renal calculi consist mainly of oxalates, Klemperer and Tritschler (*Berliner klin. Wochenschrift*, 1901, Vol. XXXVIII., p. 1289) have made some interesting observations. If, after an ordinary meal of spinach, about 100 mgr. of soluble oxalic acid is set free in the gastric juice, about 15 mgr. appear in the urine. The rest is, in greater part, destroyed by bacteria and ferments in the intestine. Small quantities of oxalate of sodium and oxalate of calcium introduced hypodermically *in toto* in the urine, showing apparently that whatever appear amounts of oxalates enter into the fluids of the human body pass unchanged through the kidneys. But in human beings or animals fed upon a diet entirely free from oxalic acid, oxalates may yet appear in the urine. This they have shown to be due to the fact that oxalic acid may appear as a result of the digestion of kreatin, glycocol, or glycocholic acid. Thus, in a starving dog, oxalic acid appearing in the urine doubtless develops from the kreatin of the breaking-down muscle.

In order then to make the urine entirely free from oxalic acid, it will be necessary that the nourishment shall contain neither oxalic acid nor kreatin ; in other words, no vegetables or meat, and yet sufficient nourishment to prevent loss of body albumin. This will scarcely be possible ; but, as the authors point out, the question is not how to prevent the

formation of oxalic acid, for oxalic acid, when in solution, is of no harm, but how to prevent the precipitation of oxalate of calcium. As a result of a number of analyses the authors have concluded that the solubility of oxalate of calcium is proportionate to the quantity of magnesia and, in inverse proportion, to the quantity of lime in the urine. The best diet for a patient with a tendency toward oxaluria should then be one in which milk, eggs, tea, cocoa, and many vegetables are forbidden, while meat, fat, bread, grains, rice, and the legumens, as well as apples and pears, are allowed. Klemperer does not recommend the absolute prohibition of vegetables, but only spinach and the various forms of cabbage, on account of the abundant quantity of lime which they contain. Moderate quantities of other vegetables should be allowed. The patient should be encouraged to drink much water; there is no especial contra-indication for alcohol or coffee.

The quantity of magnesia in the urine may also be influenced by the administration of 2 grammes of sulphate of magnesium a day.—*Amer. Jour. of Med. Sci.*, April, 1902.

X. USE AND ABUSE OF DIGESTIVE FERMENTS.

John C. Hemmeter (*Med. News*, June 7, 1902) believes that the cause of much irrational prescribing in gastric and intestinal diseases is the lack of a correct or logical diagnosis. This can be accounted for by the fact that pepsin and pancreatin are by-products of the large meat syndicates, and can be made a source of income if doctors can be duped into using them. What should be done is to train the glands to a better activity by physical methods and the use of physiologic dietetics, and when ferments are continually administered the stomach gets lazy, and refuses to do that which is being done for it. It may be taken for granted that whenever free HCl is present in a test meal pepsin in sufficient quantities must be present also. In regard to pepsin on the market, it may be said that all wines are inefficient and some preparations contain ingredients, as pepsin and pancreatin, that cannot act in the same medium. There is rarely any indication for pepsin, as when HCl is absent there is usually plenty of pepsinogen, which only needs some HCl to convert it into pepsin. Pancreatin is completely destroyed in the stomach when HCl is

present, leaving but one indication for pancreatin—that is, complete absence or permanent deficiency of HCl and enzyme formation in the stomach. Experiment and experience have shown that when pancreatin is given in these cases the best effect is produced by giving bicarbonate of sodium at the same time. Pankreon is the latest addition, and, as it resists the HCl of the stomach, might be of use in cases of achylia gastrica and chronic atrophic gastritis, with intestinal atrophy.—*Internat. Med. Magazine*, July, 1902.

XI. THE THERAPEUTIC VALUE OF HEROIN.

F. Combemale (*L'Echo Médical du Nord*, 1902, Vol. VI.).—In 1898, the writer remarks, Dreser, of Elberfeld, first used heroin, and found that in the human subject it gave a greater depth of respiratory action, and diminished the amount of oxygen used. The writer quotes the results of various French and German physicians, and these have invariably preferred heroin to morphin in the treatment of respiratory dyspnœa and of cough. Especially is this so in cases of pulmonary tuberculosis, acute and chronic bronchitis, and emphysema.

But, although heroin is above all a sedative of the respiratory centre, it is also a good analgesic, and he quotes several authorities who have found it useful in various forms of neuralgia, in the lightning pains of locomotor ataxia, in hepatic colic, in lead colic, and in carcinoma of the stomach.

The writer gives a series of twenty-four cases in which he used heroin as a sedative for dyspnœa, and a further series of thirteen cases in which heroin acted as an analgesic.

He used an aqueous solution of the hydrochlorate for hypodermic injection 1 to 200, and the dose as a rule was five milligrammes. His twenty-four respiratory cases were principally bronchitis, acute and chronic, and pulmonary tuberculosis, both early and advanced, and he used the drug especially to relieve the dyspnœa and the cough. Five milligrammes were as a rule given both night and morning, and invariably with good results. After twenty-four hours the cough was much relieved, and the patient, who as a rule had been getting little rest, was able to sleep with comparative comfort.

One objection to the drug was that in some cases of arterio-

sclerosis there was giddiness and intoxication, even after administration had been stopped, and it was also found that in cases of advanced phthisis heroin seemed to check the expectoration, and so hasten the end.

The writer's nervous cases in which the drug was used as an analgesic consisted principally of cases of tabes dorsalis, sciatica, lead colic, and carcinoma of stomach, and in every case five milligrammes was sufficient to give almost immediate relief.

Compared with morphin, heroin was found superior in the fact that the duration and intensity of the action was longer, and that smaller doses were required. At the same time, heroin has no after-effect on the digestive tract; there is no loss of appetite, and no constipation. In very few cases was it found necessary to increase the dose of the drug, and in no case was it found necessary to give more than two centigrammes ($\frac{1}{4}$ grain).

To sum up, the writer found in heroin a useful drug in dyspnœa, cough, and nervous pains. There was no risk with it of morphinomania. Patients with arterio-sclerosis were exposed to giddiness and nausea, which, though not dangerous, were at least very annoying, and patients with pulmonary tuberculosis with cavity formation lost ground very rapidly.—*Med. Chronicle*, May, 1902.

XII. ADRENAL EXTRACT AND HÆMATEMESIS.

Dr. J. Adam presents a new method in the use of this remedy. Fenwick recently called attention to the good effects which he had obtained in the treatment of hæmorrhage from the stomach by the ingestion of capsules of adrenal extract. It is interesting to notice that another physician called attention to the same fact in much the same manner—namely, Grünbaum—early in 1900. These observers agree in stating, it is well to remember, that when administered by the mouth this drug may cause violent vomiting, which in its turn will aggravate the hæmorrhage; the new method overcomes this. The instance is reported of a young girl with an intense hæmorrhage from the stomach, who, after having taken several doses of a number of tablets of the pulverised extract of the adrenal capsules, continued to vomit more or less fresh

blood. In the presence of this intolerance of the extract by the mucous membrane of the stomach he substituted the rectum as the avenue for giving the drug. After having washed out the bowel with a solution of twenty grains of calcium chloride he injected into the rectum, at first every two hours, then every four hours, ten grains of the pulverised adrenal extract suspended in water. The hæmatemesis ceased completely and promptly. This fact should be remembered, because it seems to prove that this extract acts as hæmostatic, not in bringing about coagulation of the blood, but in causing contraction of the vessels which are bleeding. The power of the mucous membrane of the rectum to absorb the drug was certainly increased to a considerable degree by the large quantity of blood which the patient had lost, and similarly the action of the drug was increased by the same cause. The author also uses this drug during the course of surgical operations, on tampons impregnated with adrenal extract, with the purpose of clearing the operative field of blood, and thus of making it accessible to view. The drug may also be employed to increase and prolong the effect of anæsthesia, with the aid of ethyl chloride, in the operations of minor surgery and in removal of teeth. For this purpose it is necessary to apply a small dressing soaked in the extract upon the region where ethyl chloride is to be applied.—*La Semaine Médicale*, 1902, No. 4, p. 60; and *Amer. Jour. of Med. Sci.*, June, 1902.

XIII. APOMORPHIN IN HYSTERIA.

Faucher strongly recommends apomorphin for hysterical attacks. He injects $\frac{1}{10}$ gr., and claims that in this way he is able to cut short hysterical attacks and hystero-epilepsy. The vomiting and subsequent depression have a sedative effect on the nervous system. One great advantage of the treatment is the saving in time. The doctor can leave the house within 15 minutes. Faucher has also used this method in several cases of true epilepsy.—*Bull. Med. d. Quebec*, Jan., 1902; and *Edin. Med. Jour.*

XIV. MENTHOL AS A PALLIATIVE OF COUGH.

It is certainly safer to allay cough by means of a non-

poisonous local anæsthetic than by morphin or any other narcotic. Such an agent, according to Saenger, of Magdeburg (*Therapeutische Monatshefte*, 1901, No. 7; *Wiener klinische Wochenschrift*, September 12), is menthol. A few crystals may be vapourised in a spoon over a flame and inhaled, or a few drops of a forty or fifty per cent. alcoholic solution may be rubbed between the hands and the hands then held before the nose. At first the cough is intensified, but it soon subsides. This result can be produced, however, only if the mucous membrane is free from accumulated secretion. The remedy acts well in whooping-cough, but it should not be used in cases of acute inflammatory disease of the lung or pleura, or if there is a tendency to hæmoptysis.—*New York Med. Jour.*, Nov. 9, 1901.

XV. A FEW NOTES ON THE SALTS OF SULPHOCARBOLIC ACID.

Green (*Penn. Med. Jour.*, Dec., 1901) feels that the value of the sulphocarbolates in their various forms has been as a rule greatly overlooked by the physician. They seem to be of great use in arresting intestinal fermentation; here the sodium salt is usually employed; although it will correct flatulency by checking fermentation, it does not rank high as an antiseptic. When constipation is also a factor, the combination of sulphocarbolate of sodium with cascara and aromatics will be found advantageous. The stools after the administration of this drug become quite dark. For the ordinary sick headaches the combination of sulphocarbolate of sodium and acetanilid will give prompt relief. The action of the other salt seems to assist in the absorption of acetanilid that is usually insoluble. In various diarrhœal conditions and in dysentery the sulphocarbolate of zinc is to be preferred. The sodium salt has been used with success in the treatment of purpura hæmorrhagica.—*Internat. Med. Magazine*, March, 1902.

XVI. PITUITARY GLAND IN ACROMEGALY.

Kuh points out that in all cases of acromegaly, changes in the pituitary bodies have been discovered. In the few apparently exceptional cases the diagnosis was doubtful. Probably the hypophysis exerts an influence on the growth of the body. In three cases of acromegaly Kuh has tried the effect of feeding with powdered pituitary bodies. In the first case,

that of a Jew, aged twenty-nine, the disease seemed to be slowly progressing. In this case the pituitary treatment did not seem to have much beneficial action, though, whenever the powders were stopped, he complained that his headache became more intense. It seems also as if the mental depression was slightly diminished by the treatment. In another case, that of a Swede, in whom the symptoms had been of gradual onset, there was given 5 grs. of powdered pituitary bodies thrice daily. She steadily improved during a year and a half, and was able to resume her work. Afterwards she relapsed, suffering from severe cramps in the legs, and becoming very depressed. During the last eighteen months there was no change in the objective signs. In the third case the powdered gland relieved headache, vertigo, and hyperidrosis. After a year's improved health he died suddenly. Kuh holds that in two of the cases the treatment was distinctly beneficial. The organic changes were, of course, not removed, but the subjective symptoms were relieved.—*Journ. Med. Assoc.*, Chicago, February 1, 1902; and *Edin. Med. Jour.*, June, 1902.

WIRELESS TELEGRAPHY IN MEDICINE.

ON its recent trip across the Atlantic, a titled passenger on board the "Kaiser Wilhelm der Grosse" was taken ill with appendicitis. Drs. William T. Bull, of New York, and Roswell Park, of Buffalo, were aboard and treated him. An ambulance was telegraphed for while the steamer was 40 miles at sea, and was in readiness on the arrival of the steamer.—*Medical News*, August 9, 1802.

AN INTERNATIONAL SOCIETY OF SURGERY.

THE Belgian Society of Surgery, whose annual congress will take place in Brussels, from the 8th to the 11th of September, 1902, has invited the most eminent surgeons of all countries to take part in the congress, and to found an International Society of Surgery. The three following questions will be debated:—1. The treatment of appendicitis. Speakers—Dr. Broca, Paris; Dr. Sonnenburg, Berlin; Dr. Roux, Lausanne; Dr. Gallet, Brussels. 2. The treatment of fractures of the limbs. Speakers—Dr. Tuffier, Paris; Dr. Rothschild, Frankfürt-am-M; Dr. Hannecart, Brussels. 3. Operative asepsis, in reference to the preparation of the hands and ligatures. Speaker—Dr. Walravens, Brussels. The Secretary of the Belgian Society of Surgery is Dr. H. Verneuil, 310 Rue Royale, Brussels.

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—LOMBE ATTHILL, M.D., F.R.C.P.I.
General Secretary—JOHN B. STORY, M.B., F.R.C.S.I.

SECTION OF PATHOLOGY.

President—E. J. MCWEENEY, M.D.
Secretary—A. H. WHITE, F.R.C.S.I.

Friday, May 2, 1902.

The PRESIDENT in the Chair.

Report of the Reference Committee.

THE HON. SECRETARY of the Section read the report of the Reference Committee on the specimens of diseased vertebræ exhibited at a previous meeting by Dr. Doyle. The report stated that the inflammation which had been present in the vertebræ had caused the absorption of a large portion of the transverse ligament of the atlas, but that neither tuberculous disease nor suppurative inflammation had occurred.

Case of Continued Fever due to the Bacillus Enteritidis of Gärtner.

DR. CRAIG said the patient who was the subject of the communication was an unmarried man, aged twenty-two, of temperate and regular habits. About September 18, 1901, he complained of not feeling well, was out of sorts, and to recuperate he went home to Wexford for ten days. On the 24th he had shiverings, felt worse, and during the next few days vomited several times; had slight diarrhœa, but felt no pain. He returned to Dublin on the 28th of the month, and on the 30th he visited the Meath Hospital, where he came under his (Dr. Craig's) notice. His

temperature was 103°; pulse 100; respirations 24. His tongue was furred with a creamy matter, though clean at the tip and along the margins; when protruded it was seen to be ataxic. He was covered on the front and back of the trunk with rose spots, and was suffering from diarrhœa, the stools being thin and yellowish. Typhoid fever was diagnosticated, and the man was admitted to hospital. The following day the temperature was 104°; his cerebration was slow, he was disinclined to talk, lay on his back, had an eruption of herpes labialis, and in the evening his temperature reached 104·6°. The rash became darker. Sir John Moore saw him in consultation, and recommended his removal from the ward, as he looked on the case as one of typhus. Professor White examined the blood-serum and found that Widal's reaction took place with a one in twenty-five dilution. During the following days his condition became worse, the diarrhœa more frequent, still neither pain nor tympany; his spleen was distinctly enlarged. He now refused nourishment, became wildly delirious, having to be held down; he passed his fæces and urine under him unconsciously. He got black coffee and hypodermics of strychnin, but no alcohol. He died on the eleventh day after admission to hospital. The autopsy revealed an enlarged spleen and a condition of inflammation of the mucous membrane throughout the length of the small intestine, but no enlargement or ulceration of Peyer's patches.

PROFESSOR A. H. WHITE said the small intestine did not present the ordinary lesions of typhoid fever; the whole mucous membrane was inflamed. The spleen was enlarged, and from it he obtained a pure culture of an organism which, though at first sight it appeared to be the typhoid bacillus, he now considers to belong to the *B. enteritidis* group. The organism is a motile bacillus, which decolourises by Gram, and does not liquefy gelatine or coagulate milk; it ferments glucose, but not glycerine. These and other points Professor White demonstrated by the exhibition of about twenty different cultures on various media of this organism and similar cultures of the typhoid bacillus, the *Bacillus coli*, and two known varieties of the *B. enteritidis* kindly given him by Professor O'Sullivan. Unfortunately he did not immunise an animal against this organism, but hoped to do so in order to determine, if possible, to which of the varieties of the *B. enteritidis* group this organism belongs. In this connection it should be noted that the blood-serum from some typhoid patients gave a

clumping reaction with this organism at low dilutions only, while the serum of this patient gave a reaction with typhoid bacilli at one in twenty-five, but not at one in fifty. Professor White then recounted a number of outbreaks of serious illness following on the eating of meat containing these organisms, in many of which deaths resulted, and gave more especially an abstract of Durham's work on the subject. He looks on the present case as one not of typhoid fever but of fever due to a bacillus having all the morphological, cultural, and pathogenic characters of the *B. enteritidis*, and suggests that possibly some of the milder and shorter cases of fever may be due to this or some similar organism.

THE PRESIDENT desired to congratulate Professor White on his large and beautiful series of cultures. His paper raises many interesting points. For example, the constancy of character of these organisms. They are subject to great variety, and they cannot place much importance on slight differences. He inclines to the idea that the Gärtner organism occupies an intermediate position between the typhoid bacillus and the colon bacillus. He regrets that Professor White had not immunised an animal against this bacillus; until this is done he has not shown that the organism is that of Gärtner. The case related in its clinical aspects had a striking resemblance to a series of six or eight cases brought forward by Chiari, at the International Medical Congress, Moscow, in which there were no typhoid lesions, but in which splenic puncture obtained micro-organisms which gave typhoid infection. He looked on the case as one of typhoid septicæmia due to an aberrant bacillus.

DR. COLEMAN thought the authors were carrying the refinement of diagnosis too far. His recollection was that in Chiari's cases the micro-organisms were obtained from the gall-bladder.

PROFESSOR MCWEENEY — From both the spleen and the gall-bladder.

DR. BEWLEY — The absence of ulceration in Peyer's patches does not exclude typhoid fever. Mann has drawn attention to this fact. Is it characteristic of Gärtner's bacillus not to cause ulceration?

PROFESSOR WHITE had not much to say beyond thanking the members for the reception given to his paper. With what the President has said he agrees in the main; but he considers the Gärtner group of micro-organisms as distinct organisms, not

aberrant forms. If this theory is accepted, then the case is not one of typhoid fever. The organism found is, he believes, undoubtedly a *B. enteritidis*. He will, however, immunise an animal. He did not examine the gall-bladder because he had not got it. He was aware that there are a number of cases of typhoid fever without intestinal lesion recorded. Many of them, however, had not been proved, or had bacteriologically only been imperfectly proved. Some cases, however, had been completely proved, and in these typical typhoid bacilli were found. Such cases alone should be accepted as typhoid septicæmia. In his opinion they cannot have too refined a diagnosis. He is not aware whether ulceration may follow on *Bacillus enteritidis* infection.

Sarcomatous Osteo-Chondroma of Femur Removed by Disarticulation at Hip.

PROFESSOR C. Y. PEARSON, of Cork, exhibited the following case:—C. C., aged fifty-seven, farmer, married, some family. Family history good. Always healthy himself, and has had no previous illness. About eight years ago had a fall from a ladder, a distance of 11 feet, and landed on his feet. About two years after this he noticed a small swelling on the front of his thigh at the lower part. This was about the size of a marble, hard, and unaccompanied by pain. It gradually increased in size, and in another two years it was of such a size that he had to get his trousers enlarged for it. At this time (about four years ago) he was seen by the late Dr. O'Sullivan, who, after consultation, advised amputation; the patient refused to consent, and returned home to the country. Up to this time he had never suffered much pain. On August 17th, 1901, he was again admitted to the North Infirmary. The tumour had by this time assumed large dimensions, and was causing severe pain. It was of almost stony hardness, and measured 31 inches in circumference at its widest part. The skin over it presented numerous dilated veins, and a cutaneous eruption of a lichenous character. The leg was much swollen and œdematous. There were two glands in the groin of stony hardness and about the size of a walnut. Operation performed August 22nd. The femoral vessels were exposed by anterior vertical incision, and ligatured above and below the glands, which were then excised. The amputation was then completed by a socket-shaped incision, all vessels clamped as divided, no tourniquet or digital pressure being employed. The patient made a good

recovery, but returned in April, 1902, ailing with severe abdominal pain, and was found to have a tumour with communicated impulse in the epigastrium; behind was a large gland with secondary deposit; also an enlarged gland near the external iliac. The tumour was a periosteal osteo-chondroma, sections of which showed ossification in cartilage and the sarcomatous tissues. A section of one of the glands showed large cells, with active nuclei resembling squamous epithelium, but believed to be cartilage cells.

PROFESSOR MCWEENEY said that sarcomata are usually infective through the blood current, though cases are on record showing that the lymphatics sometimes convey the infection. In his experience the enlarged lymphatics usually disappear after operation. The cells seen in the section exhibited by Professor Pearson are remarkable, being large, cartilaginous, with active nuclei.

PROFESSOR BENNETT congratulated Professor Pearson on the successful removal of such a large osteoid sarcoma. He found that such growths taking their origin from the periosteum are, as a rule, of the more malignant type. The case is further interesting from the considerable time the tumour existed before it gave evidences of malignancy, and it is much to be regretted that the poor man did not get operated on years before he did. Malignant tumours of this character usually infect the abdominal organs, but the most frequent site of infection is the lung.

DR. BLAYNEY desired to draw attention to some very interesting statistics of the recurrence of sarcomata that have recently been published, showing a percentage of ninety. The prognosis is decidedly bad in such cases. It has, however, been recorded in the paper to which he has referred that cases in which suppuration occurred had a smaller percentage of recurrence of the disease than any others; and some surgeons have recommended that hypodermics of the toxin of the *Bacillus prodigiosus* be injected into such tumours to promote suppuration, and that the production of pus during healing, after operation, be encouraged.

PROFESSOR PEARSON did not inject Coley's or any other fluid in sarcomatous tumours; he thought the methods recommended savoured of trifling with human life. He waits and watches results before adopting extraordinary measures. He omitted mentioning that all the muscle tissue of the leg below the site of the tumour had undergone colloid degeneration.

Papilloma of the Breast.

PROFESSOR C. YELVERTON PEARSON also showed a breast with

large encapsuled tumour, which he had removed from a girl, aged eighteen. It had commenced five months previous to removal, and had rapidly increased. There was no enlargement of axillary glands, but marked engorgement of the veins. Microscopic examination showed it to be a papillomatous form of adenoma, with penetration of the acini.

SECTION OF SURGERY.

President—T. MYLES, President of the Royal College of Surgeons in Ireland.

Sectional Secretary—JOHN LENTAIGNE, F.R.C.S.I.

Friday, May 9, 1902.

THE PRESIDENT in the Chair.

Living Exhibits.

MR. D. KENNEDY exhibited a case of excision of the shoulder for necrosis of the humerus, with specimens of the necrosed bone removed. He also exhibited a case of congenital dislocation (sub-spinous) of both shoulder-joints, with skiagram.

MR. JOHN LENTAIGNE exhibited a case of tuberculous disease of the ankle-joint, with extensive disease of the tibia, astragalus, and os calcis, cured by *raclage*. Previously exhibited on March 30th, 1900, exhibited again by special request. He also exhibited a case of Mickulicz's operation: osteoplastic resection of foot.

Card Specimens.

MR. W. TAYLOR—Prostate removed by suprapubic method; MR. G. JAMESON JOHNSTON—Limb amputated for gunshot wound of the femur; MR. J. LENTAIGNE—Ossifying chondro-sarcoma of leg involving both tibia and fibula.

Successful Case of Double Resection of the Intestine for Injury.

MR. R. LANE JOYNT reported the case of a boy, aged sixteen, who was struck in the abdomen by the shaft of a van. He was brought to the Meath Hospital and laparotomy was performed. A portion of the jejunum was torn from its mesentery. The bowel above was severed from the last portion of the duodenum. The rents in the mesentery extended deeply to its root. The injured bowel, twenty-two inches in length, was removed, and end-to-end anastomosis done by a Murphy's button. The transverse mesocolon was also torn through and a tube of intestinal mucous membrane

over one inch in length was stripped of its peritoneum and the muscular coats only were left connecting the colon. This was excised, and a second end-to-end anastomosis was done with sutures by Cheatle's method. The button was passed on the seventeenth day, and recovery was perfect; no disturbance of nutrition had followed.

The PRESIDENT said he quite agreed with Mr. Joynt in the inadvisableness of using a Murphy's button in the operation on the large bowel, especially as one had been used to connect the surgical wound surfaces in the small bowel. The Murphy's button, being liberated earlier in the small intestine, would very probably occlude the Murphy's button in the colon. Suturing the bowel has the great advantage of being free from the risk of occlusion; the surgeon is not kept for seventeen or eighteen days in a state of anxiety waiting for the passing of the button, and with a little practice the bowel can be sutured almost as quickly as the button could be fixed in position. He was much impressed with the fact that the boy was kept for some days without food. Abdominal surgery has taught them that food may be safely withheld from patients for some days. In this case delirium supervened, but was quickly subdued by the giving of some nourishment.

MR. L. H. ORMSBY said that when he came to assist Mr. Lane Joynt the case looked hopeless. The operation, which took two hours to perform, was watched with care and attention. He agreed that the Murphy button was inadvisable. The lesson he learned from this case was that when a case is seen no time is to be lost. Mr. Lane Joynt's quickness in taking immediate steps saved the boy's life. He (Mr. Ormsby) saw the boy a few days since, and found him looking strong and well. It is impossible to tell by external appearances the serious injury that may have taken place.

MR. DOYLE said he did not agree with those that held an operation was necessary in every case of abdominal injury. He related a case of a boy who by a fall from a height on a sharp stone sustained severe abdominal injuries and got diffuse peritonitis, but he is to-day alive and well, although his parents refused to allow an operation.

MR. BLAYNEY said he would like to hear from Mr. Joynt what he thought of Cheatle's suture, and what reason he had for employing it in this case? He (Mr. Blayney) looked on it as trustworthy.

MR. LENTAIGNE said he would like to know how Mr. Joynt dealt with the hæmorrhage. In his experience it formed one of the most troublesome incidents of such operations. He considered the Murphy button altogether unsuitable in section of the large intestine. He was anxious to hear Mr. Joynt's explanation of the not uncommon fact that severe injury to the intestines would result from external violence without being accompanied by any external injury.

DR. PARSONS said he was much interested in the account Mr. Lane Joynt gave of the gradual increase in the frequency of the pulse, which he (Dr. Parsons) looked on as a valuable sign in perforation of the stomach. Ten years ago he read a paper on this steady increase in the number of the pulsations, which averaged ten in the hour. He would like to hear from Mr. Lane Joynt why he operated on this boy? The boy's appearance was good, his pulse was normal, there seemed to be no indication of danger. He would have been inclined to have everything in readiness for operation, but he would have waited for symptoms of injury.

MR. LANE JOYNT said, in reply, that the President had pointed out one of the great difficulties—want of practice in suturing the bowels. The difficulty, however, was to get bowels to suture; the intestines in the cadaver were so wholly unlike those in the living subject that they were of no use for the purpose. He purposed trying the suturing on the carcases of pigs. With Mr. Doyle he agreed that occasionally a marvellous case of abdominal injury does occur and recover without surgical interference; but he looked on such cases as showing how much some natures may suffer and yet the patient survive. He does not, and cannot, consider them as in any way justifying non-interference. The Cheatle suture he found easy to use, and capable of being rapidly executed. It has the great advantage that in its application the bowel is not mauled. He was fortunate in having no hæmorrhage to contend with. The consensus of surgical opinion is against the use of Murphy's button in excision of portions of the large intestine. Homer Gage, of Worcester, Massachusetts, had published a number of cases of similar injury to the intestines. A number of these had been caused by pieces of wood thrown from circular saws in saw mills, and some by carriage poles and similar blunt pointed objects striking people in the abdomen. Where operation was performed, injury to the mesentery or intestines had always been found. If the rate of revolution of an average sized circular

saw be considered, it will be found that the peripheral speed of the saw, and consequently the speed of fragments of wood flying off at a tangent, approximates very closely to that speed of impact caused by a bicyclist riding eight to ten miles an hour colliding with a vehicle going towards the bicycle at a similar or less speed, the speed of impact being the sum of the speed of the two moving bodies. Experience showed that such blows were invariably accompanied by internal injuries, and the history of the case alone was sufficient grounds to justify operation.

Two Cases of Perforated Gastric Ulcer.

Mr. Alexander Blayney read a paper on perforated gastric ulcer, illustrated by two cases. The first, a girl, aged twenty-four, was operated on twenty-one hours after the occurrence of the perforation. The aperture, situated on the anterior surface near the pylorus, was readily found and sutured. The abdomen was flushed out and closed without drainage. The patient did well for the first six days, but her temperature then rose, and eventually she died from general peritonitis, due to the bursting of a localised abscess into the general peritoneal cavity. The second, a girl, aged twenty-one, was operated on nineteen hours after the perforation took place. The ulcer was found on the anterior surface near the cardiac end and lesser curvature. There was a great amount of surrounding induration, rendering suturing very difficult. A portion of the lesser omentum was adjusted over line of sutures. Gauze drain was inserted down to this. Early progress most satisfactory. On eighth day a slight rise of temperature took place; fever continued, and on the eleventh day the wound was re-opened and a large perisplenic abscess disclosed. This was drained through the ninth intercostal space, portion of the anterior wound being packed with gauze. Temperature did not subside for a considerable time. Eventually both wounds healed and all stomach symptoms disappeared. However, another abscess formed under the scar, which was opened more than two months after the original operation. The patient is now quite well.

Mr. Ormsby said he was sure they were all pleased at the good results that attended Mr. Blayney's efforts, which were successful from the knowledge gained by his former mistake.

Mr. R. Lane Joynt said Mr. Blayney's paper was interesting from the long after-treatment necessary, and the way he coped with the many complications. He had prescribed raisin tea for his boy patient, but the lad disliked its sweet taste, and as it purged

him it was discontinued. He would like to know how Mr. Blayney got clear of the risk of wounding the pleura. It is easy on the cadaver to recognise everything, but in the freedom given by a small surgical wound in the living body things are not so easy, all the difficulties are not anatomical ones.

MR. LENTAIGNE said the case shows the extreme importance of ascertaining in every case of non-success what it was that caused the non-success. Mr. A. Blayney saved his second case by formulating a plan from the knowledge he acquired from the unsuccessful one. He quite agreed that some of the poison left after the washing out of the peritoneum caused the abscess.

MR. TAYLOR said he might just point out that the pleura can be avoided by taking the lower border of the ninth rib in the mid-axillary line. The pleura does not come within three finger-widths of this depth.

DR. PARSONS said two years ago he had a somewhat similar case to that of Mr. Blayney. The area of the perforation was so infiltrated that the sutures cut through, and the wound in the stomach was sealed with a piece of omentum, and a gauze drainage piece was inserted. Ten days afterwards the temperature suddenly rose to 101°; the wound was opened, and an abscess was found. The patient subsequently recovered, but is still from time to time subject to severe attacks of pain. He would like to know the subsequent history of Mr. Blayney's case. He cannot understand why Mr. Blayney deferred operation so long. The perforation took place at 11 30 p.m. after a large meal of bread and beef, and yet the operation was not performed until 5 p.m. on the following day. Hilton Fagge had laid down twelve hours as the limit in time for success; in this case twenty-one hours elapsed. One of the most important factors in determining the issue is time.

MR. BLAYNEY said, in reply, that raisin tea was liked by his patient and did not produce purging; it is advisable to avoid the use of proteids in such cases. The transverse incision allowed of his pressing outward the skin with his finger at the lower border of the ninth rib, where he felt pretty certain he was free of the pleura. He quite agrees that time is of the utmost importance in such cases. Withal he cannot accept Hilton Fagge's limit, for cases have recovered after thirty hours. All the same the operation, if possible, is best performed within the twelve hours, within which limit 50 per cent. of cases recover.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by Sir J. W. MOORE, B.A., M.D., Univ. Dubl.;
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VITAL STATISTICS.

For four weeks ending Saturday, August 9, 1902.

IRELAND.

TWENTY-TWO TOWN DISTRICTS.

The average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ending August 9, 1902, in the Dublin Registration Area and the twenty-one principal provincial urban districts of Ireland was 17·7 per 1,000 of their aggregate population, which, for the purposes of these returns, is estimated at 1,092,401. The deaths registered in each of the four weeks ended Saturday, August 9, and during the whole of that period, in the several districts, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

Towns, &c.	Week ending				Average Rate for 4 weeks	Towns, &c.	Week ending				Average Rate for 4 weeks
	July 19	July 26	Aug. 2	Aug. 9			July 19	July 26	Aug. 2	Aug 9	
22 Town Districts	17·7	17·3	18·4	17·7	17·8	Lisburn -	22·8	18·2	13·6	4·5	14·8
Armagh -	20·7	27·6	6·9	13·7	17·2	Londonderry	21·8	12·8	20·5	6·4	15·4
Ballymena	28·8	19·2	4·8	0·0	13·2	Lurgan -	17·7	22·1	4·4	13·3	14·4
Belfast -	16·9	15·6	18·6	17·6	17·2	Newry -	8·3	16·6	12·6	4·2	10·4
Clonmel -	35·8	15·3	5·1	35·9	23·0	Newtownards	5·7	5·7	40·1	22·9	18·6
Cork -	17·2	15·1	18·5	17·8	17·2	Portadown	15·6	0·0	0·0	15·5	7·8
Drogheda -	12·3	4·1	20·4	8·2	11·3	Queenstown	0·0	6·6	13·2	13·2	8·3
Dublin - (Reg. Area)	20·2	20·2	21·2	20·2	20·5	Sligo -	9·6	19·2	4·8	38·4	18·0
Dundalk -	0·0	0·0	16·0	12·0	7·0	Tralee -	5·3	26·6	26·4	10·6	17·2
Galway -	15·5	31·1	15·5	7·8	17·5	Waterford	11·7	17·5	11·7	13·6	13·6
Kilkenny -	9·9	19·9	9·8	44·2	20·9	Wexford -	4·7	28·0	9·3	14·0	14·0
Limerick -	20·5	17·8	17·8	16·4	18·1						

The deaths (excluding those of persons admitted into public institutions from without the respective districts) from the principal zymotic diseases, registered in the 22 districts during the week ended Saturday, August 9, were equal to an annual rate of 2·4 per 1,000, the rates varying from 0·0 in sixteen of the districts to 4·8 in Sligo. Among the 121 deaths from all causes registered in Belfast are 3 from measles, 6 from whooping-cough, 4 from enteric fever, and one from diarrhœa. The 26 deaths in Cork include one from measles, one from diphtheria, and one from diarrhœa.

DUBLIN REGISTRATION AREA.

The Dublin Registration Area now consists of the City of Dublin as extended by the Dublin Corporation Act, 1900, together with the Urban Districts of Rathmines, Pembroke, Blackrock, and Kingstown. The population of this Area is 378,761 ; that of the City being 293,394, Rathmines 33,208, Pembroke 26,025, Blackrock 8,759, and Kingstown 17,380.

In the Dublin Registration Area the births registered during the week ended Saturday, August 9, amounted to 244—144 boys and 100 girls ; and the deaths to 154—84 males and 70 females.

Deaths.

The registered deaths represent an annual rate of mortality of 21·2 in every 1,000 of the population. Omitting the deaths (numbering 7) of persons admitted into public institutions from localities outside the Area, the rate was 20·2 per 1,000. During the thirty-two weeks ending with Saturday, August 9, the death-rate averaged 24·3, and was 3·1 below the mean rate for the corresponding portions of the ten years 1892–1901.

The 154 deaths registered in the week ended Saturday, August 9, include 20 deaths from measles, a number which is equal to an annual rate of 2·8 per 1,000 of the estimated population of the Registration Area. The deaths from measles in the preceding 4 weeks had been respectively 6, 8, 8, and 18. Of the 20 deaths 9 appear to have occurred in hospitals. Scarlet fever, influenza, and whooping-cough each caused one death ; 2 deaths were due to diphtheria, 4 deaths to enteric fever, and 3 to *diarrhœa*, dysentery.

Tuberculous phthisis caused one death, and 14 deaths were tabulated under *phthisis*. Tuberculous meningitis caused 9 deaths,

tabes mesenterica one death, and 4 deaths were due to other forms of tubercular disease.

Two deaths were registered as carcinoma, and 3 as *malignant disease*, "*cancer.*"

Diseases of the nervous system caused 13 deaths, including 9 deaths from *convulsions* (of the latter 5 occurred in infants under one month, 2 in infants over one month but under one year, and 2 in children over one year but under 5 years of age).

Eighteen deaths were caused by diseases of the heart and blood-vessels, including 5 deaths from *apoplexy*, *hemiplegia*, and one death from cerebral hæmorrhage.

Twenty-eight deaths were caused by diseases of the respiratory system, equal to an annual rate of 3·9 per 1,000 of the estimated population, the average rate for the corresponding period of the past 10 years being 1·9 per 1,000. There were 16 deaths from bronchitis, 2 deaths from broncho-pneumonia, and 6 deaths from *pneumonia*.

Two deaths were due to accidental causes.

In 10 instances the cause of death was "uncertified," there having been no medical attendant during the last illness; these cases comprise the deaths of 8 children under 5 years of age (including 6 infants under one year old) and the deaths of 2 persons aged 60 years and upwards.

Sixty-five of the persons whose deaths were registered during the week were under 5 years of age (31 being infants under one year, of whom 13 were under one month old), and 33 were aged 60 years and upwards, including 15 persons aged 70 and upwards, of whom 4 were octogenarians.

The Registrar-General points out that the names of causes of death printed above in italics should be avoided whenever possible in Medical Certificates of the Cause of Death.

STATE OF INFECTIOUS DISEASE IN DUBLIN.

(1.) Cases of Infectious Diseases Notified to the Public Health Committee of the Corporation.

Sir Charles A. Cameron, C.B., Medical Superintendent Officer of Health for the City of Dublin, has furnished information regarding the number of cases of infectious diseases in the City of Dublin notified under "The Infectious Diseases (Notification) Act, 1889," as follows :—

Week ending July	19,	1902,	..	..	238 cases.
,, ,,	26,	,,	..	..	313 cases.
,, August	2,	,,	..	..	262 cases.
,, ,,	9,	,,	..	..	243 cases.

Of the 243 cases notified in the week ended August 9, 10 were erysipelas, 17 enteric fever, 13 scarlatina, 8 diphtheria, 181 measles, 4 "continued fever," 3 typhus fever, 1 small-pox, and 6 meningitis.

(2). Cases of Infectious Disease in Rathmines Urban District.

Mr. Fawcett, Executive Sanitary Officer for Rathmines Urban Council, has furnished information regarding the number of cases of infectious diseases in the Urban District of Rathmines notified under "The Infectious Diseases (Notification) Act, 1889," as follows :—

Week ending July	19,	1902,	..	..	5 cases.
,, ,,	26,	,,	..	..	2 cases.
,, August	2,	,,	..	..	3 cases.
,, ,,	9,	,,	..	..	7 cases.

Of the 7 cases notified in the last week, one was enteric fever, 2 were "continued fever," 3 were chicken-pox, and one was diphtheria.

(3.) Cases of Infectious Disease in Pembroke Urban District.

Mr. Manly, Executive Sanitary Officer for Pembroke Urban Council, has furnished information regarding the number of cases of infectious disease in the Urban District of Pembroke notified under "The Infectious Diseases (Notification) Act, 1889," as follows :—

Week ending July	19,	1902,	..	..	17 cases.
,, ,,	26,	,,	..	..	17 cases.
,, August	2,	,,	..	..	13 cases.
,, ,,	9,	,,	..	..	8 cases.

Of the 8 cases notified in the last week, 3 were measles, 2 were diphtheria, 2 were scarlet fever, and one was whooping-cough.

(4.) Cases of Infectious Diseases under Treatment in Dublin Hospitals.

During the week ended Saturday, August 9, 69 cases of measles were admitted to hospital, 48 were discharged, there were 9 deaths, and 131 cases remained under treatment at the close of the week.

Thirteen cases of enteric fever were admitted to hospital, 8 cases were discharged, there were 4 deaths, and 52 cases remained under treatment at the close of the week.

Three cases of typhus fever were admitted to hospital, one was discharged, and 3 patients remained under treatment at the close of the week.

Twenty cases of scarlatina were admitted to hospital, 2 cases were discharged, there was one death, and 67 cases remained under treatment at the close of the week. This number is exclusive of 13 cases under treatment at Beneavin, Glasnevin, the Convalescent Home of the Cork-street Fever Hospital.

Eight cases of diphtheria were admitted to hospital, 4 were discharged, and 24 cases remained under treatment at the close of the week.

In addition to the above-named diseases, 2 cases of pneumonia were admitted to hospital, 2 patients were discharged, there was one death, and 8 cases remained under treatment at the end of the week.

STATE OF INFECTIOUS DISEASE IN THE CITY OF BELFAST.

Dr. Whitaker, Medical Superintendent Officer of Health, has furnished information regarding the number of cases of infectious diseases in the City of Belfast notified under "The Infectious Diseases (Notification) Act, 1889," as follows :—

Week ending July	19,	1902,	.. ..	69 cases.
„ „	26,	„	.. ..	36 cases.
„ August	2,	„	.. ..	64 cases.
„ „	9,	„	.. ..	46 cases.

Of the 46 cases notified in the week ended August 9, 27 were enteric fever, 6 erysipelas, 2 diphtheria, 7 "continued fever," and 3 scarlet fever.

ENGLAND AND SCOTLAND.

The mortality for the week ended Saturday, August 9, in 76 large English towns, including London (in which the rate was 13·4), was equal to an average annual death-rate of 13·6 per 1,000 persons living. The average rate for eight principal towns of Scotland was 13·9 per 1,000, the rate for Glasgow being 13·5 and for Edinburgh 14·2.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ *N., Long.* 6° 15′ *W., for the Month of July,* 1902.

Mean Height of Barometer, - - -	30·027 inches.
Maximal Height of Barometer (5th, at 9 a.m.),	30·240 ,,
Minimal Height of Barometer (26th, at 4 p.m.),	29·194 ,,
Mean Dry-bulb Temperature, - - -	58·5°.
Mean Wet-bulb Temperature, - - -	54·9°.
Mean Dew-point Temperature, - -	51·6°.
Mean Elastic Force (Tension) of Aqueous Vapour,	·384 inch.
Mean Humidity. - - - -	78·4 per cent.
Highest Temperature in Shade (on 13th), -	74·8°.
Lowest Temperature in Shade (on 21st), -	45·1°.
Lowest Temperature on Grass (Radiation) (21st),	42·0°.
Mean Amount of Cloud, - - -	65·4 per cent.
Rainfall (on 17 days), - - - -	3·163 inches.
Greatest Daily Rainfall (on 25th) - -	1·342 ,,
General Directions of Wind, - - -	N.W., W.

Remarks.

The month opened well, and spells of warm, summer-like weather were enjoyed in the first fortnight; but after the 17th temperature ruled particularly low, and the reign of cold, north-westerly winds was resumed, with sunless skies and heavy rains on the 19th, 25th, and 26th. During the last-named two days a rainstorm of much intensity prevailed—1·796 inches falling in Dublin in the 24 hours ended 6 p.m. of Saturday, the 26th. The downpour was much heavier in Co. Wicklow—for example, 2·43 inches were measured at Fassaroe, near Bray, as the result of 8 hours' rainfall, on the night of the 25th. This torrential rainfall was connected with the passage in a north-easterly direction from the South of Ireland to Scandinavia of a deep depression, in which the barometer sank to 29·19 inches in Dublin on the afternoon of the 26th. The duration of bright sunshine was estimated at 161¼ hours, or a daily average of 5·2 hours, compared with a twenty years' average (1881–1900) of 166·8 hours recorded at the Ordnance Survey Office, Phœnix Park.

In Dublin the arithmetical mean temperature (59·6°) was below the average of the 30 years 1871–1900 (60·3°); the mean dry-bulb readings at 9 a.m. and 9 p.m. were 58·5°. In the thirty-seven years ending with 1901, July was coldest in 1879 (" the cold

year") (M. T. = 57·2°). It was warmest in 1887 (M. T. = 63·7°); and in 1868 ("the warm year") (M. T. = 63·5°). In 1900 the M. T. was 63·4°, and in 1901, 63·5°.

The mean height of the barometer was 30·027 inches, or 0·112 inch above the corrected average value for July—namely, 29·915 inches. The mercury rose to 30·240 inches at 9 a.m. of the 5th, and fell to 29·194 inches at 4 p.m. of the 26th. The observed range of atmospheric pressure was, therefore, 1·046 inches.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 58·5°, or 2·9° above the value for June, 1902. Using the formula, *Mean Temp.* = *Min.* + (*Max.* — *Min.* × ·465), the value was 59·1°, or 0·7° below the average mean temperature for July, calculated in the same way, in the thirty years 1871–1900, inclusive (59·8°). The arithmetical mean of the maximal and minimal readings was 59·6°, compared with a thirty years' average of 60·3°. On the 13th the thermometer in the screen rose to 74·8°—wind, W.; on the 21st the temperature fell to 45·1°—wind, N.N.W. The minimum on the grass was 42·0° on the 21st.

The rainfall was 3·163 inches, distributed over 17 days. The average rainfall for July in the thirty-five years 1866–1900, inclusive, was 2·560 inches, and the average number of rainy days was 18. The rainfall, therefore, was much above, but the rainy days were rather below, the average. In 1880 the rainfall in July was very large—6·087 inches on 24 days; in 1896, also, 5·474 inches fell on 18 days. On the other hand, in 1870, only ·539 inch was measured on 8 days; in 1869, the fall was only ·739 inch on 9 days; and in 1868, ·741 inch fell on but 5 days. In 1900, 4·519 inches fell on 15 days, and in 1901, 2·080 inches on 13 days.

High winds were noted on 10 days, and attained the force of a gale on three occasions—the 8th, 10th and 25th. Temperature reached or exceeded 70° in the screen on 7 days, compared with 16 days in July, 1901. In July, 1887, temperature reached or exceeded 70° in the screen on no fewer than 17 days. In 1888 the maximum for July was only 68·7°. On 4 days the thermometer failed to reach 60°.

There were no electrical disturbances. Solar halos were seen on the 2nd and 26th.

The rainfall in Dublin during the seven months ending July 31st amounted to 15·507 inches on 115 days, compared with 11·432 inches on 93 days in 1901, 17·609 inches on 129 days in 1900, 14·416 inches on 107 days in 1899, 13·060 inches on 106 days in

1898, 15·600 inches on 125 days in 1897, 13·328 inches on 102 days in 1896, 16·785 inches on 96 days in 1895, 7·935 inches on 80 days in 1887, and a thirty-five years' average of 14·620 inches on 113 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall in July was 4·550 inches on 11 days, compared with 2·390 inches on 10 days in 1901, 5·140 inches on 15 days in 1900, 3·480 inches on 14 days in 1899, 1·145 inches on 6 days in 1898, 1·625 inches on 10 days in 1897, 5·726 inches on 16 days in 1896, and 3·680 inches on 16 days in 1895. Of the total rainfall ·850 inch fell on the 3rd, ·950 inch on the 20th, and 2·120 inches on the 25th. The total fall since January 1 has been 19·641 inches on 95 days, compared with 16·060 inches on 85 days in 1901, 23·331 inches on 120 days in 1900, 22·990 inches on 109 days in 1899, 14·645 inches on 94 days in 1898, 19·750 inches on 116 days in 1897, 13·082 inches on 77 days in 1896, and 17·950 inches on 83 days in 1895.

At Cloneevin, Killiney, Co. Dublin, the rainfall in July was 3·64 inches on 13 days, compared with a seventeen years' (1885–1901) average of 3·202 inches on 16·7 days. On the 25th the rainfall was 1·73 inches. In July, 1901, 2·80 inches fell on 13 days; in 1900, 4·56 inches on 16 days; in 1899, 3·48 inches on 17 days; in 1898, ·84 inch on 7 days; in 1897, 1·28 inches on 10 days; in 1896, 6·72 inches on 20 days; in 1895, 3·58 inches on 17 days; in 1885, only ·70 inch on 9 days. Since January 1, 1902, 16·90 inches of rain have fallen on 111 days at this station, compared with 18·38 inches on 129 days in the corresponding 7 months of 1900, and 13·54 inches on 95 days in 1901.

Dr. Arthur S. Goff reports that at Lynton, Dundrum, County Dublin, the rainfall was 4·27 inches on 19 days, 1·81 inches being measured on the 25th. The mean temperature was 60·6°, the range being from 75° on the 12th to 47° on the 21st. In July, 1901, 2·65 inches of rain fell at this station on 11 days.

Dr. B. H. Steede reports that at the National Hospital for Consumption, Newcastle, Co. Wicklow, the July rainfall was 3·796 inches on 13 days. The maximal temperature in the shade was 74·0° on the 8th, the minimal shade temperature was 44·0 on the 25th. The heaviest daily rainfalls were ·900 inch on the 19th, and 2·050 inches on the 25th. At this station the rainfall in May was 2·383 inches on 23 days; the thermometer rose to 68·2° in the screen on the 23rd, and fell to 37·0° on the 21st.

In June the rainfall was 3·072 inches on 18 days, ·885 inch being registered on the 1st and ·720 inch on the 19th. The thermometer rose to 77·0° in the screen on the 25th, and fell to 44·0° on the 9th and 10th. The rainfall from January 1 to July 31, inclusive, was 18·274 inches on 108 days.

At the Ordnance Survey Office, Phœnix Park, Dublin, rain fell on 16 days to the amount of 2·640 inches, the greatest rainfall in 24 hours being 1·030 inches on the 25th.

At Cork the rainfall was 2·40 inches on 7 days, or 0·18 inch below the average. On the 25th, 1·86 inches fell, or about three-fourths of the entire precipitation for the month.

Dr. J. Eyrne Power, F. R. Met. Soc., Medical Superintendent Officer of Health at Kingstown, Co. Dublin, reports that the mean temperature at that health resort was 59·5°, being 2·2° below the average for July during the previous 4 years, the extremes being—highest, 75·5° on the 8th; lowest, 45·5° on the 28th. At Bournemouth the mean temperature was 62·1°, or 1·7° below the average for July during the previous 4 years, the extremes being—highest, 83° on the 8th and 16th; lowest, 46° on the 21st. The maximum was above 75° on 12 days, and on 5 of these days it was between 76° and 83°; whereas it reached 75° on only 2 days at Kingstown. The mean temperature at Ventnor, Isle of Wight, for July during the previous 4 years has been higher than that at Bournemouth—namely, 64·0°. The mean daily range at Kingstown was 12·2°, whereas at Bournemouth it was 19·2°. These values for Bournemouth show that although the mean temperature was below the average for the month during the previous 4 years, yet the heat was excessive, and taken along with a high daily range must be regarded as trying to most constitutions, and especially to invalids. The mean sea temperature at Sandycove bathing place was 58°. The mean height of the barometer (corrected) was for 9 a.m. 30·041 inches, and for 9 p.m. 30·038 inches. The rainfall amounted to 3·66 inches on 13 days, whereas at Bournemouth it was only 1·62 inches on 12 days. Between 9 p.m. on the 25th and 9 a.m. on the 26th 1·73 inches of rain fell at Kingstown. The total duration of bright sunshine at Kingstown was 152·4 hours, whereas it was 169·3 hours at the Ordnance Survey Office, Phœnix Park, 161 hours at Valentia, 141·3 hours at Parsonstown, 171·5 hours at Southport, and 192· hours at Eastbourne.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

"Tabloid" Hypodermic Hydrargyri Succinimidum.

MERCURY succinimide is held to possess advantages over other salts of mercury for preparing solutions for intramuscular injection. It has been found of value in both primary and secondary cases of syphilis; and is especially useful in the treatment of women and children, as the local irritation consequent upon its administration is slight. In those cases, therefore, in which it is desired to administer mercury by means of intramuscular injection, the "Tabloid" product will, from its therapeutic activity and convenience, be found the most suitable preparation to use. "Tabloid" Hypodermic Hydrargyri Succinimidum, gr. 1/5 (0·013 gm.), is issued in tubes containing 20 by Messrs. Burroughs, Wellcome & Co., of Snow Hill Buildings, London, E.C.

SYPHILITIC TUMOUR OF THE STOMACH.

DR. MAX EINHORN, at the Saratoga meeting of the American Medical Association, reported a new case of syphilitic tumour of the stomach, in addition to some cases published about two years ago. He divides syphilis of the stomach into three distinct groups: (1) Gastric ulcer of syphilitic origin; (2) syphilitic tumour of the stomach; (3) syphilitic stenosis of the pylorus. This new case belongs to the second group. Several competent physicians had made the diagnosis of cancer and had advised operation. Einhorn at first also entertained a similar view. On further reflection, however, there were several features which spoke against cancer of the stomach. viz., the long duration (seven years) of the disease, absence of considerable loss of flesh, presence of free HCl, absence of ischochymia, and the history of a distinct syphilitic infection. The patient rapidly improved under antisyphilitic treatment (sodium iodide and mercury inunctions), and the tumour entirely disappeared in six weeks. While the above symptoms (gastric disturbance of long duration, &c.), if all present, may justify the surmise of a luetic nature in a palpable growth of the stomach, still a positive diagnosis can be made only under the following conditions:—1. Antisyphilitic treatment improves the subjective symptoms. 2. It also effects a gradual disappearance of the growth, so that ultimately it cannot be discovered by palpation.—*New York Med. Journ.*, August 9, 1902.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. XII.—*Case of Continued Fever resembling Enteric due to Bacillus Enteritidis of Gärtner.*[a] By JAMES CRAIG, M.D. Univ. Dubl.; Fellow and Registrar Royal College of Physicians of Ireland; Physician to the Meath Hospital and County Dublin Infirmary.

THE subject of this communication was a man, L. G., aged twenty-two years, unmarried, and manager of a boot shop in Francis-street, Dublin. He lodged in a small house, adjacent to the South Circular-road, where his younger brother and he slept together. He was strictly temperate in his habits, and spent his leisure time in writing political articles for a Wexford newspaper. About the middle of September, 1901, he felt out of sorts and went to his parents' home, 8 miles from the town of Wexford, in order to have a holiday and rest. On Tuesday, September 24th, while in the country, he got several attacks of shivering and felt more unwell than previously. During the next few days he vomited several times and passed liquid motions, from two to four times a day, but felt no pain anywhere. He was to have returned to his work in Dublin on Monday, September 30th, and accordingly he arrived in town on the Saturday evening before. He did not appear at his lodgings either that evening or on Sunday, but on Monday morning he presented himself at the out-patient depart-

[a] Read before the Pathological Section of the Royal Academy of Medicine in Ireland, on Friday, May 2nd, 1902. [For the discussion on this paper, see page 221.]

ment of the Meath Hospital, where he was seen by me. He looked dull, apathetic, and was obviously very ill. His temperature was 103·4°, pulse 100, respirations 24. I concluded that he was suffering from enteric fever, and had him put to bed at once. On proceeding to further examine him it was seen that the facial muscles, particularly about the lips, were tremulous, that his face was flushed, his tongue coated, but with red, clean edges and tip, and ataxic on being extended. The area of splenic dulness was increased; the abdomen was flat, and a very profuse eruption of large rose spots showed on the front and back of the trunk, and a few on the extremities. These disappeared on pressure. Patches of taches bleuâtres were visible on the abdomen. His cerebration was slow, and his memory defective, so that I did not worry him with persistent questioning as to his illness, but this much he was sure of that he had been feeling unwell for about 12 days. I had no doubt in my mind that I had to deal with a case of enteric fever and treated him accordingly. During the next 24 hours he had three liquid, yellow-coloured motions, the rash became darker in colour, and the facies more typhus like. His temperature was 104·2° F. on Tuesday morning, and as he had not slept he was ordered trional. On Wednesday he had developed a small crop of herpes on the right side of his mouth, his temperature was 104·6° F., he was lying very low in bed in the dorsal position, his rash was abundant and quite dusky, in fact it looked extremely like that of typhus fever. On that day (Wednesday) a little blood was sent to Professor A. H. White, who tried the Widal reaction on the following day and found clumping with no higher dilution than 1 in 25. During these days liquid motions were passed, the patient became very weak and restless, picking at the bedclothes and disinclined to take nourishment. Black coffee and hypodermics of strychnin were given, but no alcohol. On Saturday, the sixth day after admission, he became very cross, tried to get out of bed, refused his nourishment, and was delirious at night. The next day (Sunday) he was wildly delirious, had to be kept in bed by means of a sheet fastened over him, and absolutely refused nourishment. It will be seen from the chart that his temperature from Saturday morning until the following Wednesday was marked by a lower range than before. He passed urine and fæces incontinently and his delirium continued. On Wednesday at 6 30 p.m. his temperature marked 105·4° F., and he died at 1 45 on Thursday morning—the eleventh day after admission and the seventeenth from the date

of the rigors. There was no vomiting during the time he was in hospital, nor did he complain of pain or acute tenderness over the abdomen, nor of exceptional thirst. His brother had had no illness.

Sept. Oct., 1901.

Day of Month	30	1	2	3	4	5	6	7	8	9	10		
Day of Disease[a]	7	8	9	10	11	12	13	14	15	16	17		
Fahrenheit's Scale. M E	M E	M E	M E	M E	M E	M E	M E	M E	M E	M E	M E	M E	M E
106°													
105°													
104°													
103°													
102°											Died at 1.45 a.m.		
101°													
100°													
99°													
98°													
Pulse M	100	104	98	90	100	98	100	110	68	80			
Pulse E	100	110	92	90	112	100	128	88	110				
Resp. M	24	26	24	24	26	24	24	24	26	32			
Resp. E	26	24	28	26	34	28	28	24	32				
Stools	3	2	2	4	2	1	0	1	0		—		

[a] From rigors.

Owing to a resolution passed by an enlightened Managing Committee only a partial *post-mortem* examination was made. The rash had disappeared. On opening the abdomen I found the spleen moderately enlarged, the small intestines were full of yellowish coloured, liquid fæces; the mucous membrane in the entire length was injected a bright red colour, no ulceration was present, and there was an absence of any particular involvement of the Peyer's patches—in fact there was acute inflammation.

I sent the intestines and spleen to Professor White, who reported that the typhoid bacillus was not present, but that instead he had cultivated the *Bacillus enteritidis* from the organs.

ART. XIII.—*Note on a "Case of Continued Fever resembling Enteric Fever, and due to the B. Enteritidis."* * By PROFESSOR ARTHUR H. WHITE, Royal College of Surgeons in Ireland, and Pathologist to the Meath and Cork-street Fever Hospitals.

THE small intestine in this case, for the greater part of its length, was bright red, with here and there normal coloured islets. Peyer's patches were neither swollen nor ulcerated. The spleen was enlarged and soft, and from it pure cultures were obtained of a motile bacillus morphologically resembling the *B. typhosus* and the *B. coli*, and, like them, capable of growing under both aërobic and anaërobic conditions, incapable of liquefying gelatine, and decolourised when treated by Gram's stain. A further study of its cultural characteristics showed that it belonged to the *B. enteritidis* group.

It resembles the *B. typhosus*, but differs from the *B. coli* in its inability to coagulate milk or produce indol in peptone water.

It differs from the *B. typhosus* and resembles the *B. coli* by forming gas in media containing glucose, but, unlike the *B. coli*, it does not ferment glycerine.

In neutral red broth, which is unchanged by the *B. typhosus*, this organism produces a fluorescence; with the *B. coli* the neutral red broth becomes both fluorescent and yellow.

It differs from both the *B. typhosus* and the *B. coli* in producing in the deeper parts of thrust cultures in formate of soda agar a bluish black pigmentation.

The following table shows at a glance not only the chief cultural differences between the organism found in the spleen in this case and the *B. typhosus* and *B. coli*, but the striking resemblances to two known varieties of the *B. enteritidis*, kindly supplied by Professor O'Sullivan.

* Read before the Pathological Section of the Royal Academy of Medicine in Ireland, on Friday, May 2nd, 1902. [For the discussion on this paper, see page 221.]

Culture medium	B. Typhosus	Bacillus from this case	B. Enteritidis (1)	B. Enteritidis (2)	B. Coli
Potato (1 day)	Invisible growth	Whitish	Whitish	Whitish	Brownish
Milk	No coagulation	No coagulation	No coagulation	No coagulation	Coagulation
Peptone water	No indol	No indol	No indol	Slight trace of indol[a]	Indol
Litmus milk	No reduction of litmus and no coagulation	Reduction of litmus and no coagulation	Slight reduction of litmus and no coagulation	Reduction of litmus and no coagulation	Reduction of litmus and coagulation
Glucose agar (thrust)	No gas	Gas	Gas	Gas	Gas
Peptone glucose water (fermentation tube)	No gas	Gas	Gas	Gas	Gas
Glycerine gelatine (shake)	No gas	No gas	One bubble of gas	No gas	Much gas
Neutral red broth	No visible change	Became fluorescent	Became fluorescent	Became fluorescent	Became yellow and fluorescent
Formate of soda agar (thrust)	No gas, no pigment	Gas: bluish black pigmentation	Gas: bluish black pigmentation	Gas: bluish black pigmentation	Gas: no pigment

[a] Some strains of B. Enteritidis occasionally produce indol.

It was further found that serum obtained from well-marked cases of enteric had a distinct clumping effect at low dilutions only (*i.e.*, 1 in 5 or 1 in 10, and, in one case, 1 in 15), and in this connection it must also be remembered that the serum of this patient, taken some days before death, had a distinct agglutinating effect on typhoid bacilli at a 1 in 25 dilution, but none at a dilution of 1 in 40.

This organism killed a guinea-pig on the seventh day after the injection of a little broth culture into the peritoneum. From the peritoneal exudation, which was non-hæmorrhagic in character, a pure culture of the organism was obtained; pure cultures were also got from the heart's blood; the intestine was inflamed, and from its contents the organism was recovered almost in pure culture.

Taking all these facts into consideration, I had little hesitation in concluding that the organism belongs to the *B. enteritidis* group. Now, this group includes, besides the organisms described by various people under the name *B. enteritidis*, many which have been given different names by different observers, and some of them have been shown to be associated with disease in man. The *Hog-cholera Bacillus* of Salmon, which was supposed to be communicated to man in an epidemic at Middlesborough, is one of these. The *Bacillus of mouse-typhoid*, cultures of which have been sold largely on the Continent for the purpose of killing field mice, belongs to the group. Also the *Bacillus of pseudo-tuberculosis* which is often seen in laboratory guinea-pigs. Another of this group is the *B. psittacosis*, which was the cause of a couple of severe outbreaks of disease in France. The infection was traceable to certain parrots from South America, the epidemics having broken out in the houses to which these parrots had been distributed; 14 out of the 42 attacked died. Still another is the *B. fæcalis alkaligenes* described by Petruschky, and isolated from fæces of "persons suspected to be suffering from typhoid fever, in which it was frequently found to be present."

Most of the cases of disease in man caused by this group of organisms have been associated with the eating of unsound meat, and it has been proved by many different observers that the animals (whether cattle, calves or pigs), which were

the sources of supply, mostly suffered from infection with the *B. enteritidis* at the time they were slaughtered for food—cows usually suffered from puerperal trouble, and calves from septicæmic diarrhœa.

The first outbreak of the kind was reported in 1888 by Gärtner. An ox was killed suffering from diarrhœa; 93 people partook of the flesh, and of these 58 sickened, of whom one died. The latter ate a large amount of the meat in an uncooked condition, was soon attacked with vomiting, and in 36 hours was dead. In the other cases there was an incubation period which varied from 24 to 30 hours. In the milder cases the illness lasted from three to five days, while in the severe cases it lasted four weeks—the symptoms being nausea with vomiting, diarrhœa, weakness, fever, and pains in joints. Desquamation of hands and feet occurred in some instances. The capillaries of the meat were found full of bacilli. These on cultivation proved to be identical with a bacillus obtained from the organs of the patient who died. Gärtner gave it the name *B. enteritidis*.

Poels and Dhont, in a slaughter house at Amsterdam, inoculated an ox in the jugular vein with the *B. enteritidis*, and 20 minutes afterwards killed it. They immediately made a bacteriological examination, and got colonies from the liver, spleen, and blood, but obtained none from the flesh. However, after the latter had been kept 72 hours at 20° C., bacilli were found in abundance. The workers in the slaughter house were told no harm would come of eating the flesh, as it would at most only cause slight diarrhœa. Accordingly 53 of them ate it and 15 became ill with headache, gastro-intestinal catarrh, abdominal pains, and diarrhœa.

Many other cases have been reported on the Continent, but the outbreaks recently investigated by Durham in England deserve more than a passing consideration. An outbreak of gastro-enteritis occurred at Hatton affecting 186 persons. Its origin was traceable to diseased meat. From the liver of a patient who died, bacilli corresponding to the *B. enteritidis* were isolated. Four weeks afterwards Durham tested the serum of the persons affected and got clumping of 1 in 100 with this bacillus, and also, but not so

strongly, with other varieties of the *B. enteritidis*. Some of these serums gave clumping at 1 in 10 or 1 in 20 with typhoid cultures, and he points out that in the absence of differential tests such cases may be returned as typhoid. This statement is fully borne out by the case now reported. Durham goes on to say also that the *B. enteritidis* of Gärtner and Eberth's bacillus are mutually more susceptible to their respective serums than the varieties of the *B. enteritidis* which he got in this epidemic, and hence infection with the Gärtner variety might be less easy to distinguish from enteric. Twenty-eight samples of normal serum gave no reaction with any variety of the *B. enteritidis* at a dilution of 1 in 100.

An outbreak of meat poisoning was reported at Chadderton by Bowes and Ashton in November, 1898. Veal pies were sold on Thursday night, Friday, and Saturday—35 people sickened and 3 died. One ate a pie on the Thursday, 5 on the Friday, 28 on the Saturday, and one on the Sunday. Most were seriously ill, including all who ate the pies on Saturday and Sunday. From the same batch of pies 12 cases occurred in the neighbouring town of Oldham and one died. The incubation period varied from 3 to 29 hours, the duration of illness varied from 48 hours to 11 days, the temperature varied from subnormal to 104·5° F., the deaths occurred at the end of 48 hours, 3 days, and 4 days. The illness was frequently ushered in by a rigor, diarrhœa was a prominent symptom, the fæces were watery, grass green, and sometimes bloody, exhaustion of heart and general circulation was usual, the patients being tired and weary even in the less severe cases. Convalescence was slow, lasting from 3 to 6 weeks. *Post-mortem* examination of the case that died at the end of 48 hours showed patches of congestion at intervals along the small intestine more marked and frequent as you descended. Durham tested the serum from these patients with the various members of the *B. enteritidis* group which he possessed, and got reactions with some of them at 1 in 100, 1 in 200, and 1 in 500. The serums, however, gave no reaction with typhoid bacilli at 1 in 20.

At Surbiton an outbreak occurred involving 10 cases with two deaths on the 4th and 8th days respectively. The incu-

bation period varied from 8 to 44 hours, while the duration of the illness varied from 6 to 19 days. Durham tested the serum reaction in the case of all the survivors except one, and obtained positive results at high dilutions (1 in 100, &c.) with various races of the *B. enteritidis*. These serums gave no reactions at 1 in 100 with typhoid bacilli, but in some cases there was clumping at 1 in 10.

Durham also applied the serum diagnosis with similar results in the case of an outbreak at Salford, where 5 people suffered, with one death.

The case now reported by Dr. Craig presented clinically the main characteristics of typhoid fever, in which the serum reaction was present at low dilution (1 in 25), but absent at high dilution, and which on *post-mortem* examination showed none of the characteristic intestinal lesions of typhoid. The bacteriological examination revealed no typhoid bacilli but a somewhat similar organism which possesses the main morphological, cultural, and pathogenic characteristics of the *B. enteritidis* group.

These circumstances all point to the conclusion that this case of three weeks' fever was not one of typhoid. In view, however, of any lingering doubt as to the nature of the infection, the following points must also be remembered:—

1. The great mutual susceptibility of the Gärtner and typhoid bacilli, as shown by Durham, was illustrated to some extent in this case.

2. That the illness in some of these outbreaks where the infection was proved to be due to eating unsound meat lasted in some instances for several weeks; and

3. Sidney Martin has shown that the injections of toxic products of Gärtner's bacillus have much the same effects, differing only in degree, as those which result from the injection of the toxic products of typhoid bacilli.

Taking all the above points into consideration, there is, I think, some justification for the assumption that this was not a case of typhoid fever, and that some, at least, of the milder and shorter coursing cases of fever are due to this or some similar organism of far less virulence than the typhoid bacillus.

ART. XIV.—*Choledochotomy.* By ARTHUR CHANCE, Fellow and Vice-President of the Royal College of Surgeons in Ireland; Surgeon to the Mater Misericordiæ Hospital and to the Dublin Orthopædic Hospital; Consulting Surgeon to St. Michael's Hospital, Kingstown.

THE treatment of calculus obstruction in the common duct presents such dangers and difficulties that the choice of method is best made from a comparison of results obtained from the various procedures. It is of interest, therefore, to record any case which might amplify the available statistics.

In July last I was asked by my colleague, Dr. Dempsey, to see a lady who had been sent to him by Dr. J. O'Neill, of Athy. Dr. O'Neill had expressed the opinion (subsequently proved to be most accurate) that the patient was suffering from impaction in the common duct of a sharp-angled gall-stone, causing intermittent obstruction.

Our patient was a stout married lady, aged about forty. She had been suffering almost unceasingly during the previous five years. Attacks of biliary colic, some lasting two weeks, occurred at irregular but gradually diminishing intervals. The pain—originally characteristic in its position—had recently changed to the left side, radiating towards the back. Jaundice, absent until the last two attacks, was moderate. There was no itching. The stools were pale, the urine high-coloured, but without albumen. Intermittent pyrexia—the ague-like paroxysms originally observed by Murchison—formed a marked feature of the attacks, which were also accompanied by sweating and long-continued vomiting.

Our patient's physical condition had become alarming. Her pulse was frequent (80–100), weak, compressible, and intermittent; her heart sounds were weak, but there was no murmur. In the few days that had elapsed since she came under Dr. Dempsey's observation she had had two attacks, the last followed by syncope, from which she was with difficulty revived.

To submit such a patient to a prolonged and serious operation was no light responsibility. The history of the case, and particularly the shifting of the pain, pointed to extensive adhesion; the jaundice threatened free hæmorrhage. The cardiac condition was an added danger. But having regard to the miserable condition in which our patient then was, we decided that the serious risk of operation was justifiable.

With a view to limiting hæmorrhage the patient was given 30-grain doses of chloride of calcium every four hours for the three days preceding operation.

On the 21st July, the day fixed for operation, we were told that during the previous night our patient had had an exceptionally severe attack, followed by collapse. Under these untoward circumstances the operation was commenced.

A sand bag was placed under the hollow of the back so as to push forward the hepatic region. An oblique incision about five inches long was made through the abdominal wall, parallel to the costal margin. The lower border of the right lobe of the liver was exposed. The viscera were, however, so intimately adherent that it was only after prolonged dissection that it was possible to expose the common duct within the lesser omentum. Even then the duct could not be identified were it not for the calculus which lay within it. Unsuccessful efforts were made to crush this calculus by means of the fingers. The adhesions made it impossible to bring the operation area at all close to the anterior abdominal wall, and consequently manipulations of the part were conducted at the bottom of a deep pit formed by the surrounding and adherent viscera. The site of the incision being first isolated by tamponing, the duct was opened in the longitudinal direction to the extent of about an inch. A stone approximately the size of a hazel nut, and having exceedingly sharp angles, was removed without difficulty. The duct where the stone had lain was found to be much dilated, and the "ball and socket" action which had caused the intermittent jaundice was easily demonstrated. Careful exploration of the duct gave no evidence of the presence of any other stone, and the opening was secured with nine fine silk sutures. These were readily inserted by means of a rectangular cleft palate needle with a long handle. The tampon was withdrawn and a large gauze drain inserted. The edges of the incision were brought into apposition with salmon-gut sutures, placed very closely together, and penetrating all the tissues of the abdomen.

The patient rapidly recovered from the effects of the anæsthetic, and she was much less depressed than might have been anticipated from her previous condition. Vomiting, at first attributed to the anæsthetic, came on within a couple of hours. It continued and increased in frequency, so that for the first five days after operation the patient was unable to retain any nourishment

whatever. The vomited matter almost from the first consisted of bile, so that the patency of the common duct was beyond doubt. Repeated enemata, calomel, and various remedies for the vomiting were ineffectually employed until the morning of the sixth day, when a copious motion was obtained, and subsequently the history of the case was uneventful. The deep portion of the wound rapidly closed; the skin edges were, however, a little slow to heal.

On the 26th August, more than a month after operation, the patient had an attack of pain similar in type but much less severe than the previous attacks she had had. This, after lasting a few hours, suddenly disappeared, and the patient was able to leave hospital at the end of the month. I have since heard that she is progressing satisfactorily.

ART. XV.—*Clinical Report of the Gynæcological Department of the Rotunda Hospital for Year ending November* 1, 1901.[a] By R. D. PUREFOY, M.D. T.C.D., F.R.C.S.I. (Master); P. C. CARTON and W. G. FITZGERALD (Assistants).

VULVA, VAGINA AND PERINEUM.

AMONGST our patients was one in whom the vulva presented at one point the chief signs of that rare affection termed kraurosis. During her stay in hospital it nearly disappeared. A pendulous tumour of the perineum was met with and removed. I have in former Reports made some allusion to these growths and their greater frequency in females. I have not before met one in this position. In this Report, as also in last year's, we have record of a case in which, on the left side of the vagina, a small sinus was detected leading to a point on the ischial spine, where the bone was rough and evidently stripped of periosteum. The occasional douching of the sinus with an antiseptic lotion, and the administration of the syrup of iodide of iron, soon effected a cure. This trouble originated in the first confinement, which had taken place in the County Longford a few weeks previously. In our last year's Report I described a large abdominal cyst originating

[a] Read before the Section of Obstetrics of the Royal Academy of Medicine in Ireland, on Friday, May 23, 1902.

apparently in or near the left kidney. It was freely opened, the edges stitched to the opening in the parietes, and the cavity packed with gauze—a treatment which was followed by speedy recovery. At the time Dr. Earl wrote of this:—"If this is a renal tumour it is a comparatively rare condition known as papilliferous cyst adenoma of kidney; and if so it is likely to behave as a malignant growth, though there is no cancerous tissue present." His forecast, I regret to say, has been remarkably fulfilled. The poor woman sought admission to the hospital about ten months afterwards, and the local and general conditions then present made further interference hopeless.

In my cases of abdominal hysterectomy for uterine fibroids only one fatality occurred, and this was due to shock. The patient was over seventy years of age, the tumour extensively calcified, and widely adherent to omentum and intestines. The left ovary contained what, from its colour, I judged to be a calcified corpus laterum. The forceps to which I have alluded in a former Report was, in many instances, of assistance in opening the vaginal fornices.

ABDOMINAL HYSTERECTOMY FOR MALIGNANT DISEASE OF THE UTERUS.

CASE.—E. B., aged thirty-six, unmarried. This patient was admitted to hospital in October, 1900, when the cervix was found enormously dilated by a firm and apparently benign uterine polypus, the pedicle of which was attached inside the os internum. The surface of the polypus, visible through the slightly dilated os uteri, was in a sloughing condition. Two lateral incisions in wall of cervical cavity made it possible to remove the growth by morcellement; it was then observed that the uterine wall was very thick in places, and its inner surface very uneven. She convalesced satisfactorily and went home, but returned in about three months, when the uterus was found much enlarged, very fixed, and discharging blood and pus in quantity. As the conditions present rendered vaginal hysterectomy impracticable, I attempted to remove the diseased organ by the abdominal route, but the patient succumbed to the shock attendant on a very protracted and difficult operation, in the course of which I had the misfortune to injure one of the ureters.

Table I.—List of Cases Treated.

Disease	Total	Cured	Improved	Not Improved	Died	Remarks
Vulva—						
Vulvitis	2	2	–	–	–	
Bartholinian abscess	6	6	–	–	–	
Epithelioma of labium	–	–	–	1	–	Inoperable
Hæmatoma vulvæ	1	1	–	–	–	
Kraurosis vulvæ	1	1	–	–	–	
Eczema	1	1	–	–	–	
Perineum—						
Pendulous tumour	1	1	–	–	–	
Lacerations, simple	37	37	–	–	–	
„ complete	3	3	–	–	–	
Rectum—						
Recto-vaginal fistula	1	1	–	–	–	
Hæmorrhoids	1	1	–	–	–	
Fissure	2	2	–	–	–	
Prolapse	2	–	2	–	–	
Imperforate Anus	1	1	–	–	–	
Urethra and Bladder—						
Cystitis	3	1	2	–	–	
Caruncle	5	5	–	–	–	
Carcinoma	1	–	1	–	–	
Ulceration, syphilitic	1	–	1	–	–	
Urethritis	1	1	–	–	–	
Ulceration of bladder	1	1	–	–	–	
Vagina—						
Cicatrix and stenosis	1	1	–	–	–	
Cysts	2	2	–	–	–	
Cystocele	9	8	1	–	–	

TABLE I.—LIST OF CASES TREATED.—*con.*

DISEASE	Total	Cured	Improved	Not Improved	Died	REMARKS
VAGINA—*con.*						
Rectocele	5	5	–	–	–	
Fistula, vesico-vaginal	3	2	–	1	–	
Vaginitis	17	17	–	–	–	
Epithelioma	2	–	–	2	–	
CERVIX—						
Carcinoma	9	–	4	*5	–	*Inoperable
Erosion	18	18	–	–	–	
Hypertrophy	4	3	–	1	–	
Laceration	26	26	–	–	–	
Cysts of	1	1	–	–	–	
Polypus of	3	3	–	–	–	
CORPUS UTERI—						
Abortion, Incomplete	23	23	–	–	–	
Sarcoma	1	–	–	–	1	
Carcinoma	2	–	1	–	1	
Endometritis	85	70	15	–	–	
Fibromyoma	24	9	13	†1	1	†Associated with malignant disease of colon
Anteflexion, acute	21	3	18	–	–	
Pregnancy	11	–	–	–	–	
Polypus	4	3	–	–	1	Polypus sloughing; patient profoundly septic on admission
Procidentia	3	2	1	–	–	
Prolapse	2	2	–	–	–	
Adherent retroversion	17	–	17	–	–	
Retroversion	22	8	14	–	–	Pessary used in 9 cases
Retroflexion	15	7	8	–	–	Pessary used in 3 cases
„ with pregnancy	2	2	–	–	–	
Subinvolution	36	36	–	–	–	
Infantile uterus	1	–	–	–	–	

TABLE I.—LIST OF CASES TREATED.—*con.*

DISEASE	Total	Cured	Improved	Not Improvd	Died	REMARKS
FALLOPIAN TUBES—						
Pyosalpinx	4	2	1	–	*1	*Dying of hectic on admission
Salpingitis	9	4	5	–	–	
Tubal pregnancy	2	2	–	–	–	
Hydrosalpinx	2	2	–	–	–	
Hæmatosalpinx	1	1	–	–	–	
Perimetritis	14	2	12	–	–	
Parametritis	19	1	18	–	–	
OVARIES—						
Cysts	14	13	–	–	1	Gangrene of stump ducts; pyosalpinx
Cystic	25	2	†23	–	–	†Not calling for removal
Dermoid	4	4	–	–	–	
Ovaritis	3	–	3	–	–	
Prolapse	33	–	–	–	–	In four cases both; in twelve cases right only
Parovarian cyst	1	1	–	–	–	
Carcinoma	1	1	–	–	–	Primary disease of ovary
Hæmatoma	1	1	–	–	..	
ABDOMEN—						
Carcinoma	1	–	–	–	–	
Peritonitis	3	3	–	–	–	
MISCELLANEOUS—						
Ascites	1	–	1	–	–	
Melancholia	1	1	–	–	–	
Diabetes	1	–	–	–	1	
Mastitis	1	1	–	–	–	
Caries and vaginal sinus	3	1	2	–	–	
Pseudocyesis	2	2	–	–	–	
Pernicious anæmia	1	1	–	–	–	
Epilepsy	1	–	–	–	–	
Cancer of liver	1	–	–	–	1	
Sapræmia	3	3	–	–	–	

TABLE II.—OPERATIONS.

Colporrhaphy—Anterior - - - - -	13
„ Posterior - - - - -	
Colpoperineorrhaphy - - - - - -	3
Hæmorrhoids - - - - - -	1
Imperforate Anus - - - - - -	1
Epithelioma of Cervix, Cauterisation of - - -	7
Fistula, Vesico-vaginal - - - - - -	3
Posterior Division of Cervix (Dudley) - - -	3
Removal of Caruncle - - - - - -	5
„ Cervical Polypi - - - - -	3
„ Cysts of Cervix - - - - -	1
Perineorrhaphy (Lawson Tait) - - - -	40
Trachelorrhaphy—	
Emmet's - - - - - -	22
Schröder's - - - - - -	6
Sanger's - - - - - -	1
Reposition of Inverted Uterus - - - -	1
Ventral Cœliotomy—	
Exploratory - - - - - -	8
Ovariotomy - - - - - -	16
Panhysterectomy - - - - -	11
Salpingo-oöphorectomy - - - -	16
Supra-vaginal Hysterectomy - - - -	—
Tubal Pregnancy - - - -	2
Myomectomy - - - - - -	2
Salpingostomy - - - - - -	1

Table III.—Panhysterectomy (for Fibroids).

No.	Name	Age	—	Disease	Result	Remarks
1	E. E.	27	Married	Fibroid uterus .	Recovered	Severe floodings had rendered patient very anæmic.
2	M. M.	45	Single	Large fibroid uterus .	Recovered	At 40 years of age tumour so small that no interference was deemed necessary.
3	C. M'A.	40	Single	Very large fibroid, weighing 16½ lbs., reaching down nearly to sternum	Recovered	
4	E. D.	49	Single	Fibroid uterus reaching to umbilicus	Recovered	Uterus so twisted that the right appendages lay anteriorly in mesian line. Right ovary not removed.
5	D. C.	38	—	Fibroid uterus .	Recovered	Uterus reaches 2½ inches above umbilicus ; one ovary left ; large nodule in Douglas's space.
6	S. G.	41	Single	Interstitial fibroid .	Recovered	One ovary left. Tumour reaches above umbilicus.
7	J. C.	37	Married	Uterine fibroids .	Recovered	Three sub-peritoneal fibroids.
8	A. K.	27	Married	Fibro-myoma .	Recovered	Tumour reaches 3 inches above umbilicus.
9	M. W.	39	Single	Fibroid uterus .	Recovered	Tumour reaches to umbilicus ; large nodule in Douglas's space.
10	J. M.	70	Single	Large nodular fibroid reaching to ensiform cartilage	Died	Tumour was extensively calcified ; closely invested at many points by adherent omentum ; uterine vessels small, and found with much difficulty. Calcified corpus luteum in left ovary.

MYOMECTOMY.

M. R., aged forty-nine, single. Large pedunculated fibroid. Recovered.

S. N., aged thirty-five. Small pedunculated fibroid. Recovered.

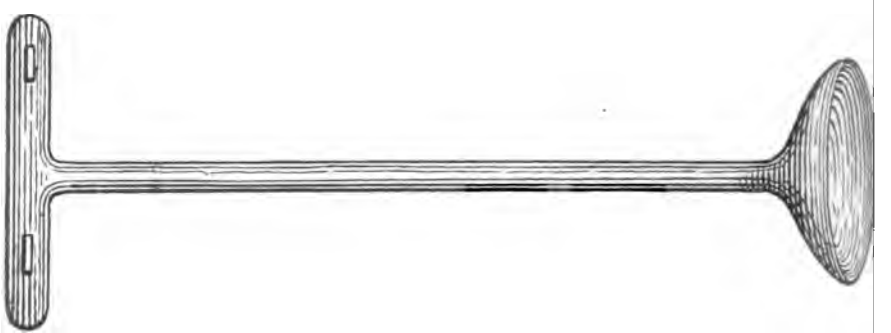
The case of M. R. was of much interest, because of the large size the tumour had attained while its existence was still unknown to the patient; and still more because of the degenerative changes which it shows on section. A few weeks before her admission she was suddenly seized with severe abdominal pain, which proved to be the beginning of an attack of peritonitis, lasting for several weeks, and greatly endangering the patient's life. The physician in attendance in the course of examining and treating the case detected the growth, and sent her to me for its removal. At the operation, very numerous omental and intestinal adhesions were encountered, and on separating them the surface of the tumour was observed to be of a greyish green colour, much more suggestive of an ovarian than of a uterine origin. On section the tissue of the growth is observed to be of a dark red colour, traversed by numerous cavernous spaces, due to changes in the blood-vessels, and containing blood much altered in character. This form of degeneration in uterine fibroids has hitherto been very rarely observed or described; and thanks to the skill and artistic ability of my Chief Assistant, Dr. Paul Carton, I am in possession of an admirable drawing which reproduces with rare felicity the above-described structural changes. My patient made an excellent recovery.

INVERSION OF UTERUS.

This case is interesting, both on account of the circumstances attending its occurrence and its happy termination:—

CASE.—M. Mc., aged twenty-seven, was delivered of her second child on April 18, 1901, and as hæmorrhage had followed the first confinement, it was deemed advisable by the physician in attendance to allow the third stage ample time. After waiting two hours it was found necessary to remove the placenta manually, as it proved to be universally adherent. All went well for a week, when the patient left her bed to undertake household duties, and was attacked with hæmorrhage, so severe as to endanger her life. Her physician on his arrival found the uterus inverted, and succeeded, as he thought, in replacing it, but the bleeding, though

greatly lessened, returned from time to time for some weeks. When strength was somewhat restored she left home for a short time, and on her return was examined and believed to be quite well. Soon afterwards, while making some prolonged exertion in her house, severe bleeding again occurred, and she was sent to the Rotunda. On admission, four months after delivery, her blanched face and general prostration were such as to cause me grave anxiety, increased by the fact that slight bleeding was still occurring. An examination easily established the diagnosis of complete inversion of the uterus, but I determined to postpone any attempt at reposition till her general condition was more favourable. While waiting for this much-to-be-desired improvement I thought over the various devices, mechanical and surgical, which have in several reported instances been found of use. Finally, I devised the very simple apparatus which is before you, and was constructed for me by our chief artificer, Mr. Smith. As I was by no means sanguine as to the possibility of immediate reposition, the precaution was adopted of having apertures placed in the cross-piece



at end of stem, with the view of applying continuous pressure by means of elastic bands. When the patient was anæsthetised the cervix was steadied with four bullet forceps, and, to our extreme satisfaction, steady pressure with the repositor for a few minutes effected reposition. A speedy convalescence followed, and the patient returned home in less than a fortnight.

When inversion of the uterus has become chronic its reduction is rarely effected without pressure applied, as in most of the recorded cases, for many hours consecutively. And I attribute our success in this instance partly to the suitability of the

appliance used, but chiefly to the steady counter-traction exercised by means of the bullet forceps.

Our cases of ovariotomies, though small, afford illustrations of the accidents and complications which may attend the growth of ovarian tumours.

CASE 9.—E. L., aged sixty, was very emaciated. The sudden occurrence of violent vomiting and other indications of collapse led me to diagnosticate rupture of the cyst; this was confirmed at the time of operation, carried out immediately afterwards. Very firm adhesions prevented the entire separation of the cyst from the parietes at several points. But convalescence was easy and rapid, notwithstanding troublesome vomiting for several days.

CASE 8.—Bridget M'A., aged sixty; presented evidence of free peritoneal fluid, with an ill-defined cystic tumour, which, at the time of operation, was found to be torn and collapsed at several points. Considerable bleeding into the peritoneal cavity had occurred, but unattended with serious constitutional symptoms.

CASE 13.—C. T., aged fifty-six, had been under my care many years ago for the treatment of menorrhagia, due to uterine fibroids; this had been controlled by injections of ergot. At the time of her admission such general distention of the belly with fluid was present that I was not certain of the presence of an ovarian cyst. At the operation three distinct cysts were removed which Dr. Earl asserts were all three ovarian.

Our only fatality was in the case of M. C., where a pustule and ovarian cyst co-existed, and I hoped that the precautions taken to prevent soiling of the peritoneum would have been effectual.

SALPINGO-OÖPHORECTOMY.

In this Table will be found cases illustrating many of the diseased conditions induced by inflammation of the appendages, and in only one, a patient of very phthisical aspect, was the convalescence at all tedious. This was due to parametritis occurring in the neighbourhood of the stump, and subsequently suppurating and discharging per vaginam.

CASE 16.—R. B., aged twenty-two, presents so many points of interest that I narrate it in full. While making some unusual

Table IV.—Ovariotomy.

No.	Name	Age	—	Disease	Result	Remarks
1	M. H.	37	Married	Dermoid R. .	Recovered	Cyst firmly attached to rectum; bladder adherent to bowel, arching over uterus, and concealing it from view.
2	M. F.	22	Single	Primary carcinoma of right ovary	Recovered	Tumour reaching into flanks, and nearly to ensiform cartilage. Recurrence in a short time.
3	M. K.	30	Married	Dermoid size of cocoa-nut	Recovered	Patient three months pregnant.
4	E. F.	41	Widow	R. & L. .	Recovered	One papillomatous.
5	M. S.	26	Married	Dermoid R. .	Recovered	
6	M. S.	26	—	R. & L.; one = fœtal head; the other smaller	Recovered	
7	B. G.	31	—	R. & L. Both small	Recovered	
8	B. M'A.	60	—	R. small cyst, L. large	Recovered	Cyst, which had ruptured previous to operation; cœlom contained large quantity of fluid freely mixed with fluid and clotted blood; intestines adherent to cyst and much congested.
9	E. L.	60	—	Large cyst .	Recovered	Shortly after admission patient became collapsed, and immediate operation necessary; cyst found ruptured; very firm adhesions to parietes.
10	R. L.	27	—	Large cyst .	Recovered	
11	M. K.	44	—	Dermoid .	Recovered	

12	M. C.	36	—	Large cyst .	—	Cyst completely filling cœlom; on tying and dividing the pedicle pus was observed oozing from the severed tube which formed part of it; this was carefully wiped and cauterised with carbolic acid, and peritoneum stitched over it. On the eighth day the local and general conditions were such that I opened the belly and found the stump and adjacent tissues in a gangrenous condition. Death soon after.
13	C. T.	56	—	Large cyst and two smaller ones. Fibroid U.	Recovered	
14	S. P.	38	—	Ovarian cyst & double hydrosalpinx	Recovered	
15	M. C.	48	Married	Left ovarian cyst .	Recovered	
16	S. N.	35	Single	Left ovarian cyst; vessels in pedicle thrombosed	Recovered	

exertion in her household duties, severe abdominal pain was experienced; soon after violent retching and purging occurred and lasted for some days before her admission to hospital. Vaginal examination shows a large cystic mass with fluid contents, occupying Douglas's space, low in pelvis and reaching above nearly to umbilicus, not movable and adherent to uterus, which lies in front. The sound passes 3½ inches. Though I hoped to drain the tumour by the vagina, I followed the plan practised in some similar cases and advocated in a former Report—viz., to perform an exploratory laparotomy, and then, with the additional guidance thus obtained, tap the tumour through the vaginal wall. On opening the cœlom, the omentum, thick and fat, was observed smoothly spread over the bowels, completely concealing them from view, and adherent to a deep red globular mass in uterine region; no appendages were visible; one round ligament could be traced, showing the tumour in view consisted of the uterus, incorporated with a swelling in Douglas's space. While endeavouring to ascertain its relations, pus escaped freely from a point at the left side of the swelling. Forthwith I proceeded to incise the posterior vaginal wall, enlarged the opening with a forceps, then washed out and packed the cavity with iodoform gauze. Four ligatures were passed through the edges of the opening in the vagina, securing the cyst wall to it. The cœlom was well flushed and a Mickulicz' bag inserted in wound and removed two days later. Some days later free bleeding occurred in the track of one of the vaginal stitches and was only stopped by placing two stitches on the bleeding point. The patient made an excellent recovery.

CASE 7.—The patient L. G. became jaundiced four days after operation, but there was no constitutional disturbance, nor delay in the convalescence.

CASE 15.—The patient from whom I removed the healthy appendages, had become blanched by repeated hæmorrhages from a fibroid uterus, presenting only slight enlargement. Thorough curetting on two occasions, followed by suitable treatment, had proved unavailing. I am happy to add that since her return to Texas, where she resides, her health has been excellent. Similar good results have been secured in all the cases of this kind so treated by me. In more than one instance where the ovary appeared much disorganised by cysts of various sizes, the larger ones have been incised, the contents scraped out, and the opening closed by silk or catgut.

TUBAL PREGNANCY.

B. M., aged thirty, 2-para. Ten years after birth of second child amenorrhœa for two months occurred, followed by bleeding for five weeks, during which time vomiting and faintness were frequently experienced. At the time of admission to hospital (July 29, 1901), an ill-defined tumour, size of fist, was felt in Douglas's space as well as some thickening of the left tube. On opening the cœlom clots in considerable quantity were lifted out of pelvis; left tube distended and adherent in Douglas's space. It was tied and removed. Peritoneum flushed and continuous peritoneal suture of silk used in addition to the ordinary interrupted sutures. Recovery.

M. J. O'K., aged thirty, 1-para, admitted August 13, 1901, with a history of hæmorrhage lasting for four weeks, preceded by amenorrhœa for six weeks. By vaginal examination it was possible to feel an oval swelling, lying immediately behind symphysis and in close relation to the cervix. A larger, firmer body lay posteriorly, which further examination showed to be the uterus. Operation, August 23. Incision showed an oblong swelling, closely adherent to bladder in front, and uterus, omentum, and intestines behind. Its removal was effected without difficulty and abdomen closed as in previous case. Recovery.

MELANCHOLIA.

One patient suffering from this distressing condition was under observation during the year, and her history shows to what a remarkable degree local treatment sometimes avails in ameliorating mental derangement.

CASE.—E. M., aged thirty-six, single, had on more than one occasion consulted me for slight pelvic distress, chiefly due to cervical catarrh and vaginitis, which were attended by insomnia and mental depression. For several months before her admission these latter troubles had become so much aggravated as to fully warrant the diagnosis of pronounced melancholia. Discussion of her ailments with sympathetic friends had led her to the conclusion that a cure was to be effected only by the removal of the uterine appendages, and this she was quite prepared to undergo. Under an anæsthetic one ovary was found cystic and slightly enlarged, the other normal, and the uterine cavity somewhat elongated. Suitable treatment for these conditions was followed

Table V.—Salpingo-oöphorectomy.

No.	Name	Age	—	Disease	Operation	Result	Remarks
1	E. R.	33	Married	Hæmatoma of ovary and salpingitis	—	Recovered	
2	C. D.	30	Married	Hæmatoma of ovary and salpingitis	—	Recovered	Pelvis contained large quantity of clots; scarcely any trace of ovary remained.
3	S. R.	30	Married	Tubo-ovarian abscess	—	Recovered	
4	A. B.	38	Married	Tubo-ovarian abscess	Left	Recovered	Gauze drain used.
5	M. C.	48	Married	Ovarian cyst and parametritis	Left	Recovered	
6	E. C.	27	Married	Tubo-ovarian abscess	Right	Recovered	
7	L. G.	26	Married	Hæmatoma of ovary	Left	Recovered	
8	K. Q.	21	Married	Double pyosalpinx -	Double	Recovered	
9	M. M'D.	21	Married	Hydrosalpinx -	Right	Recovered	
10	K. K.	36	Married	Hydrosalpinx -	Right	Recovered	
11	M. M.	21	Married	Pyosalpinx -	Right	Recovered	Salpingectomy and resection of ovaries.
12	A Q.	30	Married	—	—	—	
13	K. H.	30	Married	Hæmatosalpinx -	R. & L.	Recovered	Salpingectomy.
14	B. G.	23	Married	Pyosalpinx and ovarian cyst	Right	Recovered	Left tube thickened; ovary cystic; it was resected. Tedious convalescence, owing to parametritis.
15	Sister V.	45	—	Fibroid uterus -	R. & L.	Recovered	Appendages removed because of repeated bleedings. Perfect result.
16	R. B.	22	Married	Pyosalpinx (large) -	—	Recovered	Vaginal drainage. See p. 264.

by surprising improvement in her general health; sleep and cheerfulness returned; and she left the hospital in better health than she had enjoyed for years.

MISCELLANEOUS.

Amongst these cases the following may be noted in brief detail:—

CASE 6.—M. G. Four years ago she suffered from severe abdominal pain lasting for a fortnight, attended with foul vaginal discharge; and about this time an abdominal tumour was detected. Two weeks before admission she was attacked with severe pain in groin, attended by vomiting and followed by increasing distention of belly. When she came under our observation a firm tumour, rising above umbilicus, was detected, attended with general distention and extreme tenderness. Per vaginam the uterus was found lifted out of pelvis, and the left vaginal fornix occupied by a smooth tumour. Her aspect, pulse and temperature pointed to a hopeless condition, but I determined on an exploratory incision, which revealed the presence of an enormous quantity of fœtid pus free in the peritoneal cavity, and a malignant growth on the left side lifting up peritoneum, and in part passing behind and becoming incorporated with sigmoid flexure. In trying to separate this mass from its bed, the iliac vessels, psoas muscle, pelvic nerves and ureter were exposed. It is difficult to understand how life was prolonged for two weeks in the presence of conditions disclosed at the time of operation.

CASE 2.—The patient A. J. was of delicate aspect, had been, from childhood, frequently ailing, and many months before her admission had suffered from pyosalpinx, discharging into the bowel. As her condition after rest in bed and careful nursing showed no improvement, an exploratory operation was performed unavailingly. At the *post mortem* examination an abscess was found communicating with the rectum and containing some ounces of very fœtid pus.

Table VI.—Miscellaneous.

No.	Name	Age	—	Disease or Condition	Result	Remarks
1	F. J.	49	Single	Small fibroid uterus .	Recovered	Tumour grew from fundus; uterus deeply set in pelvis, and enveloped in adhesions. Entire relief from pain when discharged.
2	A. J.	24	Single	Tubo-ovarian abscess and pyosalpinx opening into bowel	Died	Patient was dying of hectic at the time of exploratory operation. It was not found possible to remove anything owing to adhesions.
3	C. D.	53	Married	Carcinoma of bowel and ascites	Died	Exploration only.
4	L. M.	30	Married	„ „	Recovered	Exploration only.
5	R. L.	40	Married	Chronic peritonitis .	Recovered	Exploration only.
6	M. G.	44	Married	Purulent peritonitis and malignant tumour	Died	Exploration only.
7	L. J. D.	45	Married	Peritoneal cysts and salpingitis	Recovered	Exploration only, followed by good health.
8	K. S.	29	Married	Tubercular peritonitis .	Recovered	Excellent results.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

A Text-Book of Medicine. Begun by the late CHARLES HILTON FAGGE, M.D., F.R.C.P.; sometime Physician to Guy's Hospital. Completed after his death and since revised or re-written by PHILIP HENRY PYE-SMITH, M.D., F.R.S.; Fellow of the Royal College of Physicians; Consulting Physician to Guy's Hospital. Fourth Edition. In Two Volumes. Vol. II. London: J. & A. Churchill. 1902. 8vo. Pp. xvii + 1050.

THE second volume of this fine work on Practice of Medicine opens with a detailed description of "Pneumonia *and* Inflammation of the Lungs." The opening paragraphs explain this heading and set forth the author's views, which are in accordance with modern research. "By pneumonia . . . is now understood an inflammation of the texture of the lungs, and when the term is used without qualification, one that is specific, acute, and primary. . . . It may be defined as a specific febrile disease running a short course with hepatisation of one or both lungs and pleurisy." . . . "With qualifications the word is applied much more widely, to any form of pulmonary inflammation"—such as catarrhal, lobular or broncho-pneumonia, suppurative or pyæmic lobular pneumonia, traumatic pneumonia, congestive or hypostatic pneumonia, the disseminated caseous pneumonia of phthisis, and chronic fibrous interstitial pneumonia.

Dr. Pye-Smith does not leave us in doubt as to his views about "pneumonia" in the strict sense of the term. It is "*idiopathic* and *microbic* in its origin, *acute* in its course, *lobar* in its extent, *basal* in its usual distribution, and *plastic* or *fibrinous* in the character of its exudation" (p. 2). It is, therefore, to be regretted that, in order still further to differentiate this essential pneumonia, he did not at once call it "Pneumonic Fever."

This name recognises and denotes the specific or essential nature of the disease, its infectiveness, and its cyclic course.

As to the *epidemic* nature of this form of pneumonia, Dr. Pye-Smith speaks with some reserve. He says: "Occasionally pneumonia assumes an *epidemic* character among men, as among cattle. This is seldom seen now, but there is reason to believe that, as with measles, syphilis, influenza, and perhaps the sweating sickness, this was once a more frequent type, and that its present sporadic occurrence has not been, and possibly may not be, always the rule." Certainly our experience is that the analogy is complete between enteric fever and pneumonic fever. Both are under ordinary circumstances endemic diseases; both show a seasonal epidemic prevalence—enteric fever in autumn, pneumonia in spring; while both also may become locally epidemic in the presence of active predisposing causes.

As this is the fourth edition of a well-known and even classical work, it is not necessary to write about it at any length in the way either of criticism or of analysis. Its pages brim over with information, but a really valuable and distinctive feature is the frequent interpolation in the text of illustrative clinical observations. One of these, at page 371, strikes us as particularly interesting, for it shows how wide-awake a physician must be in examining a patient, and how necessary it is to pay attention to apparently trivial details. The passage referred to reads:—

"The writer was asked to see a lady with obscure symptoms, and noticed that there was a blue line on the gums. This was explained by the family physician as due to shot which had been carelessly left in a decanter after it was cleaned. The sherry taken from this decanter had caused the lead-line. The symptoms, however, were none of them referable to plumbism, and it seemed likely that a considerable amount of sherry must have been taken to convey the lead. And on questioning the friends, the fact of intemperance, which had been carefully concealed, was admitted, and the symptoms were explained."

There are very few slips in the work—but one anachronism caught our attention at page 674, where Sir John Moore, of Dublin, is credited with having come across and described in the seventeenth volume of the "Dublin Quarterly Journal" a specimen of urostealith. The name was given by Heller in

1845 to certain soft, elastic concretions, like india-rubber, which were passed by a young man. It was Sir John's father, the late Dr. William Daniel Moore, who in 1853 and 1854 investigated certain urinary concretions which were found to consist in part of Heller's urostealith. Dr. Moore's very interesting paper will be found at page 473 of the "Dublin Quarterly Journal of Medical Science" for May, 1854 (Vol. XVII.).

When reviewing the third edition of this work in 1892, we criticised the arrangement whereby influenza and whooping-cough were described under the heading "Catarrhal Disorders of the Air Passages." We are glad to find that this has been rectified in the edition now under review, and that these diseases are—together with mumps—rightly classed with the specific fevers. Hence these three diseases are described in the first volume of the present edition—to our mind an obvious improvement.

In concluding this perhaps too brief notice, we congratulate Dr. Pye-Smith on the solid contribution to medical literature which he has made, and we cordially recommend this Text-Book of Medicine to all who desire to possess a scholarly, reliable, and masterly work on this great branch of the healing art.

Clinical Lectures on Surgical Subjects. Delivered in University College Hospital by CHRISTOPHER HEATH; Past-President of the Royal College of Surgeons of England; Emeritus Professor of Clinical Surgery in University College, London; and Consulting Surgeon to University College Hospital. Second Series. London: J. & A. Churchill. 1902. Pp. 343.

THIS little volume before us contains lectures on a variety of clinical subjects, most of which we have now from time to time in the various journals, especially the "Clinical Journal." Two of the Lane lectures delivered at Cooper Medical College, San Francisco in September, 1897, are also included, as well as "The Hunterian Oration" delivered by Mr. Heath in 1897.

The style of lecturing is clear and impressive, while the information is, on the whole, practical; but we cannot say that

the teaching is altogether in accordance with modern ideas, such, for example, as the teaching in connection with malignant disease of the rectum, in which the following advice is given :—"If you make the diagnosis correctly, you must, of course, inform the patient or some friend what the probabilities are. I don't mean that you must tell a patient who has a lump in his rectum, or a slight ring, that he must have a colotomy done; that would be ridiculous. But you must let somebody know that his health is not what it should be, and that he will probably get worse. Meantime you will give general directions." Then follow directions about diet and laxatives, after which comes the question of sedatives. The advice here is—"While the patient can go about his work and get fairly comfortable evacuations, he should do so; the time will come when he cannot do it—viz., when ulceration commences." Following this is given a description of colotomy, or as it should be termed colostomy, but not one word is said about excision of the rectum, which, of course, is the method of treatment any modern surgeon would recommend for such a condition if seen at a moderately early stage in the course of the disease.

In each lecture many good, sound, practical points will be found on diagnosis and treatment. Still we would fail in our duty in revising the volume if we omitted to draw attention to such teaching as that mentioned above.

Clinical Lectures on Stricture of the Urethra and Enlargement of the Prostate. By P. J. FREYER, M.A., M.D., M.Ch.; Surgeon to St. Peter's Hospital; Examiner in Surgery at the Durham University; Lieut.-Colonel, Indian Medical Service (retired). Second Edition. London: Baillière, Tindall & Cox. 1902. Pp. 132.

IT is only about a year since we had the pleasure of reviewing the first edition of this little book. The only change in this edition is in connection with the prostate. Chapter VII., on "Total Extirpation of the Prostate in its Capsule," is new. Most of our readers are acquainted with Mr. Freyer's views on this subject, and to him must undoubtedly be given great credit for again drawing the attention of the profession to

what we may term a simple and, in our experience, a by no means dangerous method of treating a most distressing condition.

We again congratulate Mr. Freyer on the success attending his efforts, and strongly recommend the perusal of his book.

Nothnagel's Encyclopedia of Practical Medicine. Vol. III. Diphtheria, by WILLIAM P. NORTHRUP, M.D. Measles, Scarlatina, German Measles, by THEODOR VON JÜRGENSEN, M.D., Professor of Medicine at the University of Tübingen. Edited, with additions, by WILLIAM P. NORTHRUP, M.D., Professor of Pediatrics in the University and Bellevue Hospital Medical College, New York; Attending Physician to the Foundling, Willard Parker, and Presbyterian Hospitals, New York. Authorised Translation from the German, under the editorial supervision of ALFRED STENGEL, M.D.; Professor of Clinical Medicine in the University of Pennsylvania. Philadelphia and London: W. B. Saunders & Co. 1902. 8vo. Pp. 672.

WITH commendable punctuality the third volume of this fine Encyclopædia of Medicine makes its appearance. In his Preface, the general editor, Dr. Stengel, explains that it has been necessary to substitute for one of the German articles (that on "diphtheria") an article by an American writer, who is also the special editor of the volume now under review—namely, Dr. William P. Northrup, of New York. It seems that the German author had arranged to publish an English translation of his article apart from the present series, and so the task of supplying an account of diphtheria devolved upon Dr. Northrup. We can assure our readers that in this instance, as in many others, good has come out of evil. New York, unfortunately, is a city which has long possessed an unenviable notoriety for a widespread prevalence of diphtheria within its borders. Dr. Northrup has had exceptional opportunities for observing, studying, and treating this dread disease, and he has made admirable use of those opportunities. "Beginning his work as pathologist to the New York Foundling Hospital," he observes in his Preface, "when the first bivalve tubes were used, and having been associated with

Dr. O'Dwyer at every step in the perfection (? perfecting) of intubation tubes, the author has fulfilled a labour of love in presenting a complete description of this aspect of the treatment of diphtheria as a memorial of appreciation of his colleague and friend, Joseph O'Dwyer."

The Section on Bacteriology (pages 26 to 48, inclusive) is very full. The author devotes close attention to the topics of mixed infection, pseudo-diphtheria and pseudo-diphtheria bacilli. In a word, the article is an important, up-to-date monograph on Diphtheria and its treatment, occupying some 190 pages of this large octavo volume, richly and well-illustrated, and including a very full bibliography.

The remainder of the book is a translation of Professor von Jürgensen's articles on the Acute Exanthemata in Nothnagel's Encyclopædia. Dr. Northrup has made valuable additions to the original. For example, in the monograph on "Measles," he adds a description of the buccal spots, with which the names of Filatow, of Berlin, and Koplik, of New York, have of late years been associated. Again, under the heading "German Measles (Rötheln, Rubeola)," he discusses the vexed question of the "Fourth Disease," so named and described by Clement Dukes. We observe that Dr. Northrup uses the phrase "this alleged new malady," and we quite agree with him that "the question is far from being settled, and before we can admit the existence of 'fourth disease' as a separate entity, a more careful study of rubella must be made." (Page 638).

It is a matter for regret that the editor has allowed the word "Rubeola" to stand as a synonym for Rötheln. It is true that the term is still so used in Germany, but the synonym adopted by English writers of late years is "Rubella," a term which has received the stamp of authority by adoption in the Nomenclature of Diseases of the Royal College of Physicians of London and in the reports of the Registrars-General for the several divisions of the United Kingdom.

The volume is beautifully printed, and there are scarcely any misprints. On page 138, however, we read that the antitoxin of diphtheria "is believed to be a proteid substance, destroyed by a temperature above 55° F., resembling the globulins in some of its chemical characters." Surely "55° F." should read "55° C."

Dr. Stengel is to be congratulated on the satisfactory completion of another instalment of his great editorial undertaking.

Pulmonary Tuberculosis: its Prevention and Cure. By C. RUATA, M.D.; Professor of Materia Medica in the University of Perugia. Illustrated. Bristol: J. Wright & Co. 1901. Pp. 143.

THIS book appears to be written partly for the medical profession, but mainly for the public. Hence it is very elementary in many parts, describing the structure and functions of the lungs and the nature of the tubercular processes in such a way as to be understood by any educated person.

Prof. Ruata's main points are—that most of the distressing symptoms of tuberculosis are due to septic complications, and not directly to the tubercle bacillus; and that these complications may be effectually combated by means of fresh air and antiseptic inhalations. He strongly supports the Sanatorium principle of treatment. The inhalation he recommends is composed of creosote, chloroform, and alcohol, inhaled from a mask placed over the nose and mouth.

The book is clearly written, and is a suitable one for perusal by any non-medical person who wishes to understand how a struggle may be carried on against the spread of tuberculosis.

The Medical Treatment of Gall Stones. By J. H. KEAY, M.A., M.D. London: Rebman, Ltd. 1902. Pp. 126.

DR. KEAY has himself suffered from gall stones, and as a result of his experience, personal and otherwise, he is very strongly opposed to the surgical treatment of this condition. He holds that not only do operations often injure the patient, but that even the idea that at some time or other an operation will be considered needful gravely prejudices the patient's prospects. He holds that medical treatment is calculated to be more useful than surgical. He discusses medical treatment temperately and in a scientific spirit, holding that there is no specific for gall stones, but that a great deal can be done for patients, because the immediate cause of their trouble is not

the gall stone itself, but the catarrhal and inflammatory state of the bile passages with which they are often associated. His remarks on diet are worth perusing. He does not believe in special dietaries; but holds that whatever kind of ordinary food agrees well with the patient is likely to produce a supply of healthy bile. He believes that there should not be too long intervals between meals, and that on this account patients suffering from gall stones are often the better for having eaten a fairly heavy supper.

His account of the symptoms of the disease is unusually clear and graphic.

We can commend Dr. Keay's work to our readers.

Phototherapy. By PROF. NIELS R. FINSEN, Copenhagen. Translated from the German Edition, and with an Appendix on the Light Treatment of Lupus, by J. H. SEQUEIRA, M.D. London: Edward Arnold. 1901. Pp. 79.

IN this book we have three very interesting essays by Prof. Finsen. The first treats of the effect of light on the skin, shows that sunburn and the so-called "heart erythema" are not due to the heat rays, but are caused by the chemical rays. The author goes on to argue that if the chemical rays are capable of exciting inflammation in sound skin, they will naturally be capable of exerting a very injurious influence on diseased skin. Prof. Finsen then proposed to exclude the chemical rays completely from small-pox patients. He gives details of how this was done, and shows, by quoting a number of cases under the charge of several physicians, that if the actinic rays be wholly excluded suppuration will almost never occur, and no scars will be left. The essay is illustrated with photographs of several patients. It is well worthy of serious and careful consideration.

The second essay is on Light as a Stimulant. The author shows, by means of various experiments on different animals, the stimulating effect of light upon them; and finally suggests that the medical world might make more use of the stimulating properties of light.

The third essay consists of an excellent and clear description of Prof. Finsen's Method of Treating Lupus and of his Ap-

paratus. It is illustrated by photographs of patients before and after treatment.

There is an Appendix giving some statistics of the work done at the Finsen Institute at Copenhagen, written by Dr. Sequeira, the well-known light specialist of the London Hospital, who has translated the work in an unusually excellent manner,

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Clinical Methods: a Guide to the Practical Study of Medicine. By R. HUTCHISON, M.D., Assistant Physician to the London Hospital, and to the Hospital for Sick Children, Great Ormond-street; and H. RAINEY, F.R.C.P. & S. Ed., University Tutor in Clinical Medicine, Royal Infirmary, Edinburgh. With upwards of 150 Illustrations and 8 coloured plates. New and enlarged Edition. London, &c.: Cassell & Co. 1902. Pp. 612.

THIS work has been found valuable by so many students and practitioners that it becomes hardly necessary to write much about it. This second edition has been revised and brought thoroughly up to date. The chapter on the Blood has been largely re-written, and a good deal of new material introduced, especially as to the preparation, fixing, and examination of blood-films. The section on the Nervous System has also been considerably altered; as also has that on Clinical Bacteriology.

Taking this work as a whole, we can warmly recommend it as a thoroughly satisfactory book on Clinical Diagnosis.

Saunders' Year-book of Medicine and Surgery. Under the general editorial charge of GEORGE M. GOULD, M.D. *Surgery.* London and Philadelphia: W. B. Saunders & Co. 1902. Pp. 684.

WE have again to welcome this volume, which includes not merely a digest of the recent literature on general surgery, but a digest of all the recent literature contributed to obstetrics, gynæcology, orthopædic surgery, ophthalmology, otology, diseases of the larynx and nose, as well as recent advances in anatomy.

Very little of importance in the recent literature on those

subjects seems to have escaped the notice of the editor and his distinguished collaborators in the compilation of this volume. The general surgeon or specialist will find it a reliable source of the latest information on almost all subjects upon which he will have occasion to consult it.

We congratulate the editor, and predict even greater success for this Year-book in the future than it has enjoyed in the past if its present standard of excellence is maintained.

A Pocket Cyclopedia of Medicine and Surgery; based upon "A Cyclopedia of Practical Medicine and Surgery." Edited by GEORGE M. GOULD, A.M., M.D., and WALTER L. PYLE. A.M., M.D. London: Rebman, Limited. 1902.

THIS pocket volume is well bound in leather. It measures 6 inches in length and 3½ inches in width—large enough as a reference book for the coat pocket, and yet not too bulky. The arrangement is alphabetical, the print good and clear, and the illustrations numerous, well-chosen, and helpful. The booklet professes to be no more than a brief summary of Dr. Gould's larger work, and for a summary it is excellent, nothing of importance being omitted.

Manuel Pratique de Bactériologie. (Parasitologie-urologie.) (Anatomie Pathologique.) Par le DR. PETIT et G. BORNE. Un Vol., in 12 de 235 pages, avec figures dans le texte. Paris: C. Naud, Editeur, 3 Rue Racine.

THIS is what would be called in English a "cram-book"—a bad class of book rendered necessary by the conditions of examinations now-a-days. It is a fairly good specimen of its kind, covers much of the ground in bacteriology, clinical chemistry and microscopy, and pathological anatomy, but suffers from the usual drawbacks of its class—incomplete, and therefore useless, descriptions of technical processes, and statements of too sweeping a character. Thus, in describing the technique of staining tubercle bacilli in sputum, not a word is said about drying the film before staining it, and the only mode of decolorisation recommended is that by hydrochlorate of aniline, whereas nearly all workers

employ some mineral acid with equally good results. The staining process is prolonged for ten minutes, whereas two minutes is admittedly quite long enough if the stain be heated. There are several mistakes of a more serious kind. Thus, on page 105 we are told that the acidity of normal urine is due to oxalic acid (2 grammes in 24 hours) (!)

The little book will no doubt prove useful to the class for which it is intended, and the price—3 francs—is decidedly moderate.

A Manual of Surgical Treatment. By W. WATSON CHEYNE, C.B., M.B., F.R.C.S., F.R.S.; Professor of Surgery in King's College, London; Surgeon to King's College Hospital and the Children's Hospital, Paddington-green, &c.; and F. F. BURCHARD, M.D., M.S. (Lond.), F.R.C.S.; Teacher of Practical Surgery in King's College, London; Surgeon to King's College Hospital and the Children's Hospital, Paddington-green. In Six Parts. Part VI., Section I. London: Longmans, Green & Co. 1902. Pp. 479.

THIS treatise has now entered upon its last stage. The authors were compelled to divide the last part into two volumes in order to prevent delay in issuing the volume, and to prevent the condensation which must have been necessary if all the remaining subjects were to be included in one volume of convenient size. At this departure from their original intention we are sure the reader will not cavil with the authors.

The present volume is devoted to the Surgical Affections of the Tongue and Floor of the Mouth, the Surgical Affections of the Pharynx, Œsophagus, and Neck, and the Surgical Affections of the Abdomen, the latter embracing the affections of the abdominal wall, stomach, intestines, peritoneum and hernia. It is in connection with this latter section that most advances have been made in recent years. On a careful perusal there are no omissions to be detected, while the treatment is thoroughly up-to-date, and the advice given is sound in every respect.

Comparisons are odious, but we think the present volume, for uniformity of excellence, is perhaps the best of those yet published. It leaves nothing to be desired. The illustrations are numerous and good. We heartily congratulate the authors.

PART III.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—LOMBE ATTHILL, M.D., F.R.C.P.I.
General Secretary—JOHN B. STORY, M.B., F.R.C.S.I.

SECTION OF OBSTETRICS.

President—W. J. SMYLY, M.D.
Sectional Secretary—T. HENRY WILSON, F.R.C.P.I.

Friday, May 23, 1902.

THE PRESIDENT in the Chair.

Double Tuberculous Pyosalpinx.

DR. ALFRED SMITH exhibited two specimens of double pyosalpinx of tuberculous origin—(1) tubes removed from a patient, aged nineteen, who suffered from amenorrhœa for one year previously; (2) tubes from a patient, aged thirty-five, who suffered from severe dysmenorrhœa, with profuse menstrual flow.

Tuberculous Pyosalpinx.

DR. ALFRED SMITH showed a third specimen—a large pyosalpinx removed from the left side of a married woman, who was anxious to become pregnant. In this case, the right tube and ovary were apparently normal, the enlarged tube was intimately adherent and very tense. It was aspirated and cyst cavity washed out; contents, when received by Dr. Dargan, the pathologist, showed tuberculous deposits on surface of tubes with caseous degeneration; the cyst contents showed pure cultures of staphylococci. This is interesting, as there was no history of the invasion and the right tube and ovary were normal.

Fibromyoma.

DR. ALFRED SMITH also exhibited an extremely large fibromyoma attached to a fourth month pregnant uterus. It was removed from a patient, aged twenty-eight, on account of the extreme distress caused by its rapid growth, and it was impossible to do a myomectomy. The distress was so pronounced that the patient could not lie in bed. The abdomen was so tender that it could be prepared for operation only under ether. A supra-vaginal operation was performed; recovery uneventful.

Vaginal Hysterectomy.

DR. HORNE exhibited a uterus removed by vaginal hysterectomy. The patient was aged fifty, and mother of two children; last pregnancy nine years ago. Menstruation remained regular until a year ago, ceased for three months, then became irregular. On examination the uterus was freely movable—normal position. There had been no watery discharge. Curettage of the uterus was performed to check the hæmorrhage. On examination of the scrapings by the pathologist, Dr. McWeeney, he reported:—"These are very succulent, richly cellular and exhibit an adenomatous overgrowth of the uterine glands, which appears to be undergoing malignant change, is in fact partly converted into adeno-carcinoma." On account of this report Dr. Horne had advised vaginal hysterectomy, which a few days later he performed. The operation presented no special difficulties. The convalescence was perfectly normal. The important points to which he wished to call attention were the absence of the usual symptoms associated with malignant disease, and the importance of having uterine scrapings carefully examined by the microscope, in women near the climacteric when hæmorrhage is irregular.

Observations on the First Stage of Labour; the Causal Relation of this Stage to Rupture of the Uterus.

DR. E. HASTINGS TWEEDY read a paper on this subject. The onset of labour should be reckoned from the moment of the establishment of uterine polarity. Uterine polarity is probably induced by an overstretched condition of the lower uterine segment nerves, brought about as a result of labour contractions. A fully dilated os is not always of a diameter sufficient to permit of the passage of the fœtus. The condition known as rigid os, with its thin knife-like edge, is in reality an os that has reached

its maximum of expansion. In primiparæ especially, an os in this state tears readily, but in the event of its not quickly doing so, it moves in a direction upward and backward in response to the more powerful pull exerted on it by the posterior uterine muscular fibres. In consequence of this, the anterior cervical lip becomes enormously elongated, and is erroneously spoken of as being incarcerated or nipped between the pubes and the presenting part of the fœtus. The liberation of the lip necessitates the tearing of the cervix. A lip, such as this, becomes rapidly œdematous, and often protrudes through the vulva at the completion of labour. Under these circumstances, the cervical tear, though extensive, cannot be dealt with by immediate suture, not alone because of the great œdema, but chiefly for the reason that there is never any posterior lip to which to stitch it. Occasionally, the os does not tear after it has moved upward and backward. Then rupture of the lower uterine segment and of the anterior fornix of the vagina becomes probable. These structures will, under the conditions named, lie one on top of the other, and will be subjected to the counter pulls of anterior and posterior uterine fibres. Ruptures such as these take place insidiously, the only symptom which marks their onset frequently being the moving of the rigid os upward and backward.

Dr. Horne said that in his experience cases of ruptured uterus were usually associated with contracted pelves, and were consequently unusual in Dublin, where the condition named was seldom met with. He did not look on the strong pains as the principal cause; he rather inclined to the idea that insufficient dilatation or dilatation slowly occurring was the chief factor, the head being shoved through, not being pressed through. The occurrence of the rupture on the left side was clearly due to the position of the woman on her left side during the labour.

Dr. Purefoy said he would like to know if Dr. Tweedy considered that a rigid os was the normal condition in primiparæ; such an idea seemed to him to be novel and startling. He would also like to hear what Dr. Tweedy considered as full dilatation of the os. In his experience, he did not find the pulling up of the posterior lip to be a precursor of rupture. The number of cases of rupture occurring in practice is small, and in his opinion uterine rupture is not nearly so often complicated with rupture of the vagina as Dr. Tweedy states (75 per cent.).

Dr. Alfred Smith said that he did not see much benefit from

Dr. Tweedy's new definition. Polarity was hardly a practical term. The old definition of the beginning of labour was equal to all demands. He expected to have heard something of the type of pelvis, the rigidity of the os, and the character of the pains from Dr. Tweedy.

DR. JELLETT said that he recognised that dilatation of the external os was not a sign of labour; he would be inclined to consider that dilatation of the internal os was such a sign. He did not accept Dr. Tweedy's explanation of polarity; he associates it more with some regulating nerve fibres connected with the higher nerve centres which regulate the muscular contractions, in a manner analogous to the simultaneous contractions of the fibres of the body and relaxation of the sphincter of the bladder and the rectum. In his opinion the first stage of labour ends clinically with rupture of the membranes.

DR. W. J. SMYLY said Dr. Tweedy's paper dealt with two subjects—the first stage of labour and rupture of the uterus. Much depends on where he considered the polarity begins; if he included the whole lower uterine segment the labour may be said to commence at the seventh month of pregnancy. He looks on Müller's ring as a very uncertain point from which to count. If the lower segment of the cervix is included it is equally faulty. Dr. Jellett's definition cannot be accepted, for rupture of the membranes has occasionally occurred months before labour. Why does the cervix rupture? He is not satisfied with the statement "when it has reached the greatest possible amount of extension." He considered the rupture to be caused by want of a proportionate rate of dilatation of the os and the force of the expelling pains. The paper is of value as causing them to discuss a subject which is one of extreme interest.

DR. HASTINGS TWEEDY, in replying, traversed the assumption that the os never tears in normal deliveries, so-called, and when the membranes have not prematurely ruptured. Such a view is contrary to conditions that obtain in other structures of the body, as, for instance, the perineum, which will at times rupture, despite the gradual and prolonged efforts to dilate it. Elongation of the anterior cervical lip is a condition frequently encountered, and this, in his opinion, indicates that the os has ceased to respond to the forces which cause its expansion. As to the injection of cocaïn into the edge of a rigid os and the supposed relaxation of the structure thereby being cited as proof of its origin in muscular

spasm, he could conceive of nothing more far-fetched. Cocaïn had no effect on motor nerves, and many reasons could be adduced to account for this supposed condition of relaxation more reasonable than the one given. He did not agree with Dr. Jellett that from a practical point of view rupture of the membrane may be taken as an indication of the commencement of the second stage, as from that time the danger of retarded delivery commenced. Such an assumption implies the complete draining away of the liquor amnii, which, of course, does not occur after rupture of membranes, save under abnormal conditions. He did not see that any analogy could properly be drawn between the bladder mechanism connected with urination, and that of the uterus in the first stage of labour. The formation of the lower uterine segment during pregnancy causes considerable displacement of the vessels and nerves, as these have to course through this segment in order to reach the cervix. In consequence of this the relaxation of the os during the period of a labour contraction can be accounted for in a manner more simple than the inferring a special nerve centre which has so rarely to be called into existence.

INDIAN MEDICAL SERVICE.

THE Military Secretary, India Office, has forwarded for publication a list of the candidates for His Majesty's Indian Medical Service who were successful at the Competitive Examination held in London on the 20th August, 1902, and following days, namely :—

		Marks			Marks
1	Pridham, A. T.	3,162	16	Easton, P. G.	2,542
2	Mackie, F. P.	3,097	17	Lunham, J. L.	2,522
3	Connor, F. P.	3,032	18	Collinson, W. J.	2,502
4	O'Leary, J.	2,995	19	Young, T. C. M.	2,500
5	Christophers, S. R.	2,913	20	Melhuish, H. M. H.	2,463
6	Dutton, H. R.	2,873	21	Jolly, G. A.	2,449
7	Jendwine, W. W.	2,820	22	Kiddle, H. H.	2,442
8	Brown, H. M.	2,817	23	Talbot, R. F. C.	2,383
9	Nesfield, V. B.	2,774	24	Rogers, F. C.	2,377
10	Emslie-Smith, H	2,738	25	Saigal, R. D.	2,366
	Pilkington, A. F.	2,738	26	Humphreys, G. F.	2,356
12	Brown, H. C.	2,645	27	Ba-Ket, M.	2,332
13	Bulteel, C. E.	2,611	28	Hingston, C. A. F.	2,289
14	Whale, G. H. L.	2,584	29	Dunn, C. L.	2,251
15	Vieyra, F. P.	2,542	30	Lauddie, A. K.	2,228

MEDICAL EDUCATION AND EXAMINATIONS IN IRELAND.

1902–1903.

MEDICAL students in Ireland, as elsewhere, have in the first instance to choose between University Degrees and Non-University Qualifications or Diplomas. Should they elect to try for an University Degree, their choice must lie between the University of Dublin, which requires a Degree in Arts before registrable Degrees in Medicine, Surgery, and Midwifery are conferred, and the Royal University of Ireland, which—while not requiring a full Arts Degree—yet rightly insists on a liberal education in Arts, tested by more than one searching examination in the same, before a candidate graduates in the three branches of medicine already mentioned—Medicine, Surgery, and Midwifery.

Outside the Universities, the chief Licensing Bodies are the Royal Colleges of Physicians and Surgeons. The Conjoint Examination Scheme between the Royal College of Surgeons in Ireland and the Apothecaries' Hall of Dublin has ceased to exist. The position of the latter body as a Licensing Corporation under the Medical Act of 1886 has been defined by the appointment of Examiners in Surgery by the General Medical Council at the bidding of His Majesty's Privy Council.

The Royal Colleges of Physicians and Surgeons are in a position to give a first-class working qualification in Medicine, Surgery, and Midwifery—a qualification which is registrable under the Medical Acts, which is universally recognised as one of high merit, and the possession of which is attended by no disabilities, such as preventing its possessor from dispensing medicines or keeping open shop for the sale of medicines, if he is legally qualified to do so.

The Medical Schools in Ireland are—(1.) The School of Physic in Ireland, Trinity College, Dublin; (2.) The Schools of Surgery of the Royal College of Surgeons in Ireland

(including the Carmichael College of Medicine and the Ledwich School of Medicine); (3.) The Catholic University Medical School, Cecilia-street, Dublin; (4.) The School of Medicine, Queen's College, Belfast; (5.) The School of Medicine, Queen's College, Cork; and (6.) The School of Medicine, Queen's College, Galway.

Facilities for Clinical Instruction in fully-equipped Medico-Chirurgical Hospitals exist in Dublin, Belfast, Cork, and Galway; but, as a rule, the Schools of Medicine in Ireland are not attached to a given hospital, or *vice versâ*, as is the case in London and other large centres of medical education. The student will, however, have little difficulty in selecting a hospital in the wards of which he will receive excellent bedside teaching, and have ample opportunity of making himself familiar with the aspect and treatment of disease.

The detailed information which follows is authentic, being taken directly from the published calendars of the respective licensing bodies.

REGULATIONS PRESCRIBED BY THE GENERAL MEDICAL COUNCIL.

With regard to the course of Study and Examinations which persons desirous of qualifying for the Medical Profession shall go through in order that they may become possessed of the requisite knowledge and skill for the efficient practice of the Profession, the General Medical Council have resolved that the following conditions ought to be enforced without exception on *all* who commence their Medical Studies at any time after Jan. 1, 1892:—

(*a*.) With the exception provided below, the period of Professional Studies, between the date of registration as a medical student and the date of Final Examination for any Diploma which entitles its bearer to be registered under the *Medical Acts*, must be a period of *bonâ fide* study during not less than five years.

(*b*). In every course of Professional study and Examinations, the following subjects must be contained:—

(I.) Physics, including the Elementary Mechanics of Solids and Fluids, and the rudiments of Heat, Light, and Electricity.

(II.) Chemistry, including the principles of the Science, and the details which bear on the study of Medicine.

(III.) Elementary Biology.
(IV.) Anatomy.
(V.) Physiology.
(VI.) Materia Medica and Pharmacy.
(VII.) Pathology.
(VIII.) Therapeutics.
(IX.) Medicine, including Medical Anatomy and Clinical Medicine.
(X.) Surgery, including Surgical Anatomy and Clinical Surgery.
(XI.) Midwifery, including Diseases peculiar to Women and to New-born Children.
(XII.) Theory and Practice of Vaccination.
(XIII.) Forensic Medicine.
XIV.) Hygiene.
(XV.) Mental Disease.

The first four of the five years of Medical Study should be passed at a School or Schools of Medicine recognised by any of the Licensing Bodies, provided that the First Year may be passed at a University, or Teaching Institution, recognised by any of the Licensing Bodies, where the subjects of Physics, Chemistry, and Biology are taught.

A student who has, previous to registration, attended a course or courses of study in one or all of the subjects, Physics, Chemistry, or Biology, in any University, School of Medicine, or Teaching Institution recognised by any of the Licensing Bodies, may without further attendance be admitted to examination in these subjects: provided always that such course or courses shall not be held to constitute any part of the five years' course of professional study.

The exception referred to above in (*a*) is as follows:—

Graduates in Arts or Science of any University recognised by the General Medical Council who shall have spent a year in the study of Physics, Chemistry, and Biology, and have passed an Examination in these subjects for the Degrees in question, are held to have completed the first of the five years of Medical Study.

The Examinations in the Elements of Physics, Chemistry, and Biology should be passed before the beginning of the Second Winter Session.

The General Medical Council recommends the Licensing Bodies to require that the fifth year should be devoted to clinical work at one or more public hospitals or dispensaries, British or foreign, recognised by any of the medical authorities mentioned in Schedule (A) of the Medical Act (1858), provided that of this year six months may be passed as a pupil to a registered practitioner possessing such opportunities of imparting medical knowledge as shall be satisfactory to the medical authorities.

1.

University of Dublin.

DEGREES AND DIPLOMAS IN MEDICINE, SURGERY, AND MIDWIFERY.

The Degrees and Diplomas in Medicine, Surgery, and Midwifery granted by the University are as follow:—

The Degrees are:—

1. Bachelor in Medicine.
2. Bachelor in Surgery.
3. Bachelor in Obstetric Science.
4. Doctor in Medicine
5. Master in Surgery.
6. Master in Obstetric Science.

The Diplomas are:—

1. Diploma in Public Health (formerly Qualification in State Medicine).
2. Diploma in Medicine.
3. Diploma in Surgery.
4. Diploma in Obstetric Science.

REGULATIONS FOR STUDENTS WHO MATRICULATED ON OR BEFORE 25TH NOVEMBER, 1891.

As the number of students who matriculated before November, 1891, is now small, it seems unnecessary to print in full the conditions which must be fulfilled in order that such candidates should qualify for the Degrees in Medicine (M.B.), Surgery (B.Ch.), and Midwifery (B.A.O.). The regulations for such candidates will be found in the *University Calendar* for 1900. The Registrar of the School of Physic in Ireland also will supply all information on application to him.

REGULATIONS FOR STUDENTS WHO MATRICULATED SINCE 1891.

The following conditions must be fulfilled in order to qualify for the Degrees in Medicine (M.B.), Surgery (B.Ch.), and Midwifery (B.A.O.):—

I. The Student must be of B.A. standing, and his name must be for at least five (Academic) years on the Books of the Medical School, reckoned from the date of his Matriculation. He may carry on his Arts Course concurrently with his Medical Course,

and he need not have taken his B.A. before presenting himself for his Final Medical Examination, but he cannot have the Medical Degrees conferred without the Arts Degree.

II. The following Courses must have been attended:—

[NOTE.—The Courses marked thus (*) must have been taken out before the Student can present himself for any part of the Final Examination. In addition, the Courses marked thus (†) must have been taken out before he can present himself for Section B; the Courses marked thus (‡) before he can present himself for the Final Examination in Midwifery; the Courses marked thus (§) before he can present himself for the Final Examination in Surgery; and the Courses marked thus (**) before he can present himself for the Final Examination in Medicine.

1. LECTURES.

WINTER COURSES.

**Systematic Anatomy.*
**Descriptive Anatomy, 1st year.*
**Descriptive Anatomy (with Dissections), 2nd year.*
**Applied Anatomy (with Dissections).*
**Practical Physiology.*
**Chemistry.*
†Surgery.
**Physiology (two Courses).*
†Practice of Medicine.
‡Midwifery.
†Pathology.

SUMMER COURSES.

**Practical Chemistry.*
**Practical Histology.*
**Botany.*
**Zoology.*
**Materia Medica and Therapeutics.*
†Medical Jurisprudence and Hygiene.
§Operative Surgery.
†Practical Pathology.

TERM COURSES.

**Physics.*—Michaelmas, Hilary, and Trinity Terms.

§**2. HOSPITAL ATTENDANCE.

1. Three Courses of nine months' attendance on the Clinical Lectures of Sir Patrick Dun's or other Metropolitan Hospital recognised by the Board of Trinity College.

Students who shall have diligently attended the practice of a recognised London or Edinburgh Hospital for one year, of a recognised County Infirmary, or of a recognised Colonial Hospital, for two years previous to the commencement of their Metropolitan Medical Studies, may be allowed, on special application to the Board of Trinity College, to count the period so spent as equivalent to one year spent in a recognised Metropolitan Hospital.

**3. PRACTICAL VACCINATION.

One month's instruction in Practical Vaccination to be attended

at the Vaccine Department, Local Government Board for Ireland, 45 Upper Sackville-street; at No. 1 East Dispensary, 11 Emerald-street; or, until further notice, at the Grand Canal-street Dispensary.

**4. MENTAL DISEASE.

A Certificate of attendance on a three months' Course of Practical Study of Mental Disease in a recognised Institution.

‡5. PRACTICAL MIDWIFERY.

A Certificate of attendance on a six months' Course of Practical Midwifery with Clinical Lectures, including not less than thirty cases.

§6. OPHTHALMIC SURGERY.

A Certificate of attendance on a three months' Course of Ophthalmic Surgery.

III. The following Examinations must be passed:—

The Previous Medical or Half M.B. Examination.

The Final Examination.

The Previous Medical Examination must be passed in all its parts before any part of the Final can be entered for, except in the case of Candidates for Diplomas.

A.—PREVIOUS MEDICAL EXAMINATION.

This Examination is divided into—

1. Physics and Chemistry.
2. Botany and Zoology.
3. Anatomy and Institutes of Medicine (Practical Histology and Physiology).

The Examination in Anatomy includes examination on the dead subject.

Before presenting himself for examination in any of the subjects the Student must have obtained credit for the corresponding Courses of Lectures and Practical Instruction.

B.—THE FINAL EXAMINATION.

The Final Examination is arranged as follows:—

FIRST PART.

SECTION A.

Applied Anatomy (Medical and Surgical), paper.

Applied Physiology, *vivâ voce.*

Materia Medica and Therapeutics, paper and *vivâ voce.*

SECTION B.

Medical Jurisprudence and Hygiene, paper and *vivâ voce.*
Medicine, paper and *vivâ voce.*
Surgery, paper and *vivâ voce.*
Pathology, paper and *vivâ voce.*

Section A may be passed in any part of the Fourth Year, provided the corresponding Curriculum shall have been completed; Section B not before Trinity Term of the Fourth Year.

Section A must be passed before the Candidate can present himself for Examination in Section B. Both Sections must be passed at least one Term before the Candidate can present himself for the Final Examinations in Surgery, Medicine, or Midwifery.

Fee for the *Liceat ad Examinandum* £5, to be paid when the Candidate enters for Section A.

SECOND PART.

MEDICINE.

Clinical Medicine.
Mental Disease.

SURGERY.

Clinical Surgery.
Operations.
Ophthalmic Surgery.

MIDWIFERY.

Midwifery, paper and *vivâ voce.*
Gynæcology, paper and *vivâ voce.*
Obstetrical Anatomy, paper.

One Section of the Second Part must be passed in Trinity Term of the Fifth Year, or subsequently. The other two may be passed in any Term of the Fifth Year, provided the corresponding Curriculum shall have been completed. Subject to this provision the Sections may be taken in any order.

Fee for the *Liceat ad Examinandum* £5, to be paid when the Candidate enters for the Section for which he first presents himself.

The Candidate must also produce Certificates of attendance at the Hospitals where the Courses prescribed for each Section are to be taken out.

UNIVERSITY DIPLOMAS.

Candidates for the Diplomas in Medicine, Surgery, and Obstetric Science must be matriculated in Medicine, and must have completed two years in Arts, and five years in Medical Studies.

The dates, regulations, and subjects of Examination are the same as for the Final Examination, except that it is not necessary to attend the Courses of Lectures in Botany and Zoology, nor to pass the Previous Medical Examination in these subjects.

A Diplomate on completing his Course in Arts, and proceeding to the Degree of B.A. may become a Bachelor, by attending the Lectures on Botany and Zoology, passing the Previous Medical Examination in those subjects, and paying the Degree Fees.

The *Liceat* fees are the same as for the Finals.

Each Candidate who has completed the prescribed Courses of study and passed all the Examinations will be entitled, if a Graduate in Arts, to have conferred on him the Degrees of M.B., B.Ch., B.A.O.. on payment to the Senior Proctor of the Degree Fees amounting to £17. A corresponding regulation applies to the Diplomas, the Fees for which are £11. He will also obtain from the Senior Proctor a Diploma, entitling him to be entered on the Register of Medical Practitioners under the Medical Act, 1886.

DIPLOMA IN PUBLIC HEALTH OR STATE MEDICINE.

The Diploma in Public Health is conferred, after examination, by the University of Dublin, upon Candidates fulfilling the following conditions:—

1. The Candidate must be a Doctor in Medicine, or Graduate in Medicine and Surgery, of Dublin, Oxford, or Cambridge.

2. The name of the Candidate must have been on the Medical Register at least twelve months before the Examination.

3. The Candidate must have completed, subsequent to Registration, six months in a Laboratory, recognised by the Provost and Senior Fellows, in practical instruction in Chemistry and Bacteriology applied to Public Health, and also have attended, practically, outdoor Sanitary work for six months, under an approved Officer of Health.*

The Examination to be passed by the Candidate is prescribed as follows:—

PART I.

Chemistry, paper and practical.

Experimental Physics and Meteorology, practical.

Bacteriology and Pathology, paper and practical.

Candidates are liable to be examined in the method of conducting *post-mortem* Examinations.

* This condition does not apply to Practitioners registered, or entitled to be registered, on or before January 1st, 1890.

PART II.

Hygiene and Epidemiology, paper.
Sanitary Engineering, paper.
Public Health Acts and Vital Statistics, paper.
Practical Sanitary Report.

The two Parts may be passed in consecutive weeks or with an interval between, at the option of the Candidate, provided that the requisite curriculum for each Part has been completed before the Candidate presents himself.

Examinations for Part I. will begin on December 8th, 1902, March 23rd, 1903, and June 8th, 1903; for Part II. on December 11th, 1902, March 26th, 1903, and June 11th, 1903.

Candidates are required to send in their names to the Registrar of the School of Physic at least a week before the first day of Examination.

Candidates who have registered since January 1st, 1890, are required to apply to the Board of Trinity College for leave to present themselves, a month before the Examination begins, and to submit at the same time Certificates of the required Courses of Study.

There is no fee.

The attention of Students is directed to the importance of obtaining a Diploma in Public Health as soon as possible after they obtain their Medical Degrees. An increasing number of Public Bodies are requiring it as well as the usual Qualifications in Medicine, Surgery, and Midwifery.

II.

ROYAL UNIVERSITY OF IRELAND.

COURSES FOR DEGREES IN MEDICINE, SURGERY, AND OBSTETRICS.

General Regulations.

The Course for these Degrees shall be of at least five Medical years' duration; but Graduates in Arts or Science who shall have spent a year in the study of Physics, Chemistry, and Biology, and have passed an Examination in these subjects for the Degrees in question, shall be held to have completed the first of the five years of Medical Study.

Students who commenced their Medical Studies after Jan. 1, 1892, must furnish evidence of having been registered by the Medical Council, as Students in Medicine, for at least 57 months,

before being admitted to the M.B., B.Ch., and B.A.O. Degrees Examination.

No one can be admitted to a Degree in Medicine who is not twenty-one years of age.

All Candidates for these Degrees, in addition to attending the lectures and complying with the other conditions to be from time to time prescribed, must pass the following Examinations:—

The Matriculation Examination.
The First University Examination.
The First Examination in Medicine.
The Second Examination in Medicine.
The Third Examination in Medicine.
The Examination for the M.B., B.Ch., B.A.O. Degrees.

The Course of Medical Studies shall be divided into five Periods of one Medical Year each.

Candidates shall furnish proper Certificates of attendance at the several Courses of Medical Instruction prescribed for the different years of the curriculum.

No such certificate will be received unless it attests a *bonâ fide* attendance at three-fourths of the whole Course. *Students are reminded that certificates of attendance at Night Lectures will not be accepted.*

No Certificates of instruction in any of the Courses of Medical Studies, in connection with either Lectures or Hospitals, can be received, unless issued by an Institution which has been formally recognised by the Senate.

The prescribed courses in Natural Philosophy, Chemistry, Biology, Anatomy and Physiology must be attended in Institutions provided with the appliances required for the performance by the Students of proper Experimental Courses and Practical Work in these subjects.

Where Certificates in a special department (Fever, Mental Diseases, Ophthalmology, &c.) are presented, they must be signed by the Physician or Surgeon in charge of such department.

THE EXAMINATION FOR THE M.B., B.Ch., B.A.O. DEGREES.

Candidates may present themselves for this Examination after an interval of such period, not being less than one Medical Year from the time of passing the Third Examination in Medicine, as the Senate may from time to time prescribe, provided they shall have completed the entire Medical Curriculum.

Printed forms of application for admission to this Examination may be had from "The Secretaries, the Royal University of Ireland, Dublin."

This Examination consists of three parts:—

(*a.*) Medicine, Theoretical and Clinical, including Therapeutics, Mental Diseases, Medical Jurisprudence, Sanitary Science, and Medical Pathology.

(*b.*) Surgery, Theoretical, Clinical, and Operative, including the use of Instruments and Appliances; Surgical Anatomy; Ophthalmology and Otology,[a] Surgical Pathology.

(*c.*) Midwifery and Diseases of Women and Children.

All Candidates must enter for and go through the entire Examination, but a Candidate may be adjudged to have passed in any of the foregoing parts in which he satisfies the Examiners.

Upon completing satisfactorily his Examination in all three divisions, the Candidate will receive, in addition to the parchment Diplomas recording his admission to the M.B., B.Ch., B.A.O. Degrees, a Certificate of having passed a Qualifying Examination in the subjects of Medicine, Surgery, and Midwifery.

The fee for this Certificate is *Ten Pounds*, which must be paid before admission to these Degrees.

DIPLOMA IN SANITARY SCIENCE.

This Diploma is conferred only on Graduates in Medicine of the University.

Candidates may present themselves for this Examination after an interval of twelve months from the time of obtaining the M.B., B.Ch., B.A.O. Degrees.

Printed forms of application for admission to this Examination may be had from "The Secretaries, the Royal University of Ireland, Dublin."

Every Candidate must, when entering for the Examination, produce[b]:—

(*a.*) A Certificate of having, *after obtaining the M.B., B.Ch., B.A.O. Degrees*, attended during a period of six months Practical Instruction in a Laboratory approved by the University. The nature of this course is fully indicated by the detailed Syllabus of the Examinations in Physics, Climatology, Chemistry, Microscopy, Bacteriology, &c.

(*b.*) A Certificate of having, *after obtaining the M.B., B.Ch., B.A.O. Degrees*, during six months (of which at least

[a] Candidates at this Examination must exhibit reasonable proficiency in the use of the Ophthalmoscope and Laryngoscope.

[b] These rules (*a*), (*b*), shall not apply to Medical Practitioners registered or entitled to be registered on or before Jan. 1, 1890.

three months shall be distinct and separate from the period of laboratory instruction required under (*a.*)) been associated day by day in the duty, routine and special, of Public Health Administration, under the supervision of:—

(1.) In England and Wales, the Medical Officer of Health of a County or of a single Sanitary District having a population of not less than 50,000, or a Medical Officer of Health devoting his whole time to Public Health Work; or

(2.) In Scotland, a Medical Officer of Health of a County or Counties, or of one or more Sanitary Districts having a population of not less than 30,000; or

(3.) In Ireland, a Medical Superintendent Officer of Health of a District or Districts having a population of not less than 30,000; or

(4.) A Medical Officer of Health who is also a Teacher in the Department of Public Health of a recognised Medical School.

*** The certificate of an Assistant Medical Officer of Health of a County or of a single Sanitary District having a population of not less than 50,000 may be accepted as evidence under (*b.*), provided the Medical Officer of Health of the County or District in question permits the Assistant Officer to give the necessary instruction and to issue Certificates.

Every Candidate must produce evidence that, after obtaining a registrable Qualification, he has attended during three months the practice of a Hospital for Infectious Diseases at which opportunities are afforded for the Study of Methods of Administration.

The Subjects of this Examination are:—

Physics;
Climatology;
Chemistry;
Microscopy;
Bacteriology;
Geology;
Sanitary Engineering;
Hygiene, Sanitary Law, and Vital Statistics.

The Candidate must draw up reports on the Sanitary condition of Dwelling Houses, or other buildings selected for the purpose.

N.B.—Proficiency in practical work and an adequate acquaintance with the instruments and methods of research which may be employed for Hygienic investigations are indispensable conditions of passing the Examination.

DIPLOMA IN MENTAL DISEASES.

This Diploma is conferred only on Graduates in Medicine of the University.

Printed forms of application for admission to this Examination may be had from "The Secretaries, the Royal University of Ireland, Dublin."

The subjects for this Examination are those prescribed for the Hutchinson Stewart Scholarship for proficiency in the treatment of Mental Disease.

BELFAST.

QUEEN'S COLLEGE.

Clinical instruction is given at the Belfast Royal Hospital. The Ulster Hospital for Diseases of Women and Children, the Belfast Maternity Hospital, the Belfast Ophthalmic Hospital, the Ulster Eye, Ear, and Throat Hospital, the Belfast District Lunatic Asylum, and the Belfast Hospital for Sick Children are open to students.

A pamphlet containing full information can be had free on application to the Registrar, Queen's College, Belfast.

CORK.

QUEEN'S COLLEGE.

Clinical instruction is given at the North and South Infirmaries (each 100 beds). Students also can attend the Mercy Hospital (60 beds), the Cork Union Hospital, the County and City of Cork Lying-in-Hospital, the Maternity, the Hospital for Diseases of Women and Children, the Fever Hospital, the Ophthalmic and Aural Hospital, and the Eglinton Lunatic Asylum. The session at Queen's College extends from October to April inclusive (twenty-seven weeks), but the hospitals are open to students in May, June, and July also, and arrangements have been made for the delivery of some of the three months' Courses of lectures during the months of April, May and June.

GALWAY.

QUEEN'S COLLEGE.

Clinical instruction is given at the Galway County Infirmary and the Galway Town Hospital.

Prizes.—Attached are eight scholarships of the value of £25 each. The Council may award Exhibitions to matriculated

students at the examinations for junior scholarships. All scholarships and exhibitions of the second, third, and fourth years may be competed for by students who have attained the requisite standing in any medical school recognised by the College Council, and have passed the Matriculation Examination in the College, or in the Royal University of Ireland.

III.

Royal Colleges of Physicians and Surgeons, Ireland.

OUTLINE MEDICAL COURSE APPLICABLE TO CANDIDATES FOR THE LICENSES OF THE ROYAL COLLEGES.

These Regulations are obligatory on all Candidates commencing their Studies on or after October 1st, 1902.

PRELIMINARY EXAMINATION AND REGISTRATION.

The General Medical Council requires that every Candidate shall produce evidence—

(*a*) Of having, before entering on medical studies, passed a Preliminary Examination in general education recognised by the General Medical Council; and

(*b*) Of having been registered by that Council as a Student in Medicine, according to Regulations, which may be obtained on application at the office of the General Medical Council, 299 Oxford-street, London, W., or its Branches—Dublin, 35 Dawson-street; Edinburgh, 54 George-square.

Each Candidate before receiving his Diplomas must produce a Registrar's Certificate, or other satisfactory evidence that he has attained the age of twenty-one years.

PROFESSIONAL EXAMINATIONS.

Revised Scheme, 1902.

Every Candidate is required to pass four Professional Examinations.

Candidates will be admissible to the various Examinations as under :—

First Professional Examination not earlier than end of first winter session.

Second Professional Examination not earlier than end of second winter session.

Third Professional Examination not earlier than end of the third year of medical study.

Final Professional Examination not earlier than end of fourth year of medical study, but it cannot be completed till the end of the fifth year of medical study.

Before admission to any Examination every Candidate will be required to furnish evidence of having passed the previous Examination, and of having attended the various courses of instruction laid down in these Regulations for each Examination.

No Candidate shall be admitted to any Examination within three months of his rejection in the subjects of that Examination by this or any other Licensing Body.

First Professional Examination.

Fees.

The Fee for this Examination is £15 15s.

Subjects of Examination.

The subjects of the First Professional Examination are :—

1. Chemistry and Physics.
2. Biology.

Every Candidate is required to produce evidence—

1. Of having passed in the subjects of the Preliminary Examination ; and
2. Of having attended Courses of Instruction in
   (*a*) Theoretical Chemistry ; six months.
   (*b*) Practical Chemistry ; three months.
   (*c*) Biology ; three months.
   (*d*) Physics ; three months.

Four complete years of Medical Study must be attended at a recognised Medical School after passing the First Professional Examination, and before completing the Final Examination.

Note.—The subjects of the First Professional Examination may be studied either at a Medical School, or at an Institution other than a Medical School recognised by the Colleges, after due inspection, for instruction in these subjects.

Second Professional Examination.

Fees.

The Fee for this Examination is £10 10s.

The subjects for the Second Professional Examination are :—

1. Anatomy.
2. Physiology and Histology.

Every Candidate is required, before admission to the Second Professional Examination, to produce evidence of having passed the First Professional Examination; also Certificates of having attended :—

Anatomical Dissections; two courses of six months each; or one course of six months and two courses of three months.

Lectures :—

(*a*) Anatomy; six months.

(*b*) Physiology; six months.

(*c*) Practical Physiology and Histology; three months.

THIRD PROFESSIONAL EXAMINATION.

FEES.

The Fee for this Examination is £9 9s.

The subjects for the Third Professional Examination are :—

1. Pathology.
2. Materia Medica, Pharmacy, and Therapeutics.
3. Forensic Medicine and Public Health.

Candidates are not admitted to this Examination before the end of the third year of Medical Study.

Every Candidate is required, before admission to the Third Professional Examination, to produce evidence of having passed the Second Professional Examination, and Certificates of having attended courses of instruction in—

(*a*) Pathology.

(1) A Systematic Course of three months.

(2) A Laboratory Course of practical instruction in a recognised Medical School; three months.

These Courses may be taken concurrently.

(*b*) Materia Medica, Pharmacy, and Therapeutics; three months.

(*c*) Public Health and Forensic Medicine; three months.

Candidates are recommended to present themselves at the same time in all the subjects of each of the above Examinations; but may present themselves in one or more of the specified divisions separately, provided they have completed the curriculum as far as concerns the subjects or subject in which they present themselves.

FINAL PROFESSIONAL EXAMINATION.

FEES.

The Fee for this Examination is £6 6s.

The subjects of the Final Professional Examination are divided into three groups :—

1. Medicine, including Fevers, Mental Diseases, and Diseases of Children.
2. Surgery, including Operative and Ophthalmic Surgery.
3. Midwifery and Gynæcology, Vaccination and Diseases of New-born Children.

Every Candidate is required before admission to produce evidence—

1. Of having passed the Third Professional Examination.
2. Of having attended—
   - (*a*) A Medico-Chirurgical Hospital for twenty-seven months (three Hospital years).
   - (*b*) A Midwifery Hospital, or Maternity, including evidence of having been present at thirty labours; six months.
   - (*c*) Clinical Instruction in Ophthalmic and Aural Surgery; three months.
   - (*d*) Clinical Instruction in Mental Diseases; one month.
   - (*e*) Vaccination, Certificate to be signed by a Public Vaccinator.
   - (*f*) Courses of Instruction at a recognised Medical School in—
     - (*a*) Medicine; six months.
     - (*b*) Surgery; six months.
     - (*c*) Operative Surgery; three months.
     - (*d*) Midwifery (including diseases peculiar to women and to new-born children); six months.

Before admission to the Final Professional Examination in Medicine, satisfactory evidence must be produced of attendance in Fever Wards during either the third or subsequent year of Hospital attendance.

A Student at or after the end of his fourth year may present himself at any one of the groups 1, 2, or 3, provided he has completed his curriculum as far as concerns the group in which he presents himself. But one of the groups must be deferred till the end of his fifth year.

Candidates must have passed in *all* the Subjects of the Final Examination before any Diploma can be granted.

NOTE 1.—In the event of a Candidate showing himself ignorant of a subject or subjects, it shall be competent for the Committee of Management, on the recommendation of the Examiners, to require such Candidate, before presenting himself for re-examination, to produce evidence of such further instruction in such subject or subjects as the Committee of Management shall direct.

NOTE 2.—This curriculum shall be compulsory on all Students who commence their professional studies after the date of its adoption by the Colleges; and all Students at present studying under the old regulations shall be permitted to present themselves for examination under the new scheme at and after the Autumn Examinations, 1902: provided that, if any Student have presented himself for examination under the new scheme, he shall not be permitted to revert to the old scheme.

NOTE 3.—After the 1st of October, 1905, it shall be compulsory on all Students to present themselves under the new curriculum, save for such exemptions as the Committee of Management may decide to be necessary in order to prevent injustice.

NEW REGULATIONS.

Existing Candidates will be permitted to come under the foregoing Revised Scheme, 1902, as undernoted:—

FIRST PROFESSIONAL EXAMINATION.

Candidates who have passed in Biology, Chemistry and Physics can proceed to the Second Professional Examination.

SECOND PROFESSIONAL EXAMINATION.

Candidates who have passed in Anatomy, Senior Physiology and Histology can proceed to the Third Professional Examination.

NOTE.—Separate credit will not be allowed for Physiology and Histology, which are now grouped as one subject.

Candidates under the former Regulations, who have passed in Part I. of the Second Professional Examination, can forthwith proceed to an Examination in Advanced Physiology alone, to be held concurrently with the Third Professional Examination.

THIRD PROFESSIONAL EXAMINATION.

Candidates who have passed in Pathology, Therapeutics, and Forensic Medicine may proceed to the Final Examination.

Candidates who have already passed in either Pharmacy or Materia Medica will be exempt from Examination in these subjects.

FINAL EXAMINATION.

No exemptions are allowed from any portion of the Final Examination,

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EXEMPTIONS.

Candidates who, subsequent to 1st January, 1892, have passed in any of the required subjects at Examinations conducted by any Licensing Body recognised by the Royal College of Physicians and Royal College of Surgeons may, on application to the Committee of Management, be exempted from further examination in such subjects under this Conjoint Scheme.

Certificates of Study.

Winter Courses shall consist of not less than 50 Lectures, and Summer Courses of not less than 30 Lectures.

No Lecture Certificate shall be received unless the number of attendances certified thereon shall be at least *two-thirds* of these numbers.

As regards Medical and Surgical Hospital Certificates, the number of daily attendances certified shall not be less than 80 for the Winter Session, and 40 for the Summer Session.

Every Candidate shall produce evidence of having acted as Medical Clinical Clerk and as Surgical Dresser.

In Mental Diseases 12 attendances will be required.

MATRICULATION AS PUPIL OF THE ROYAL COLLEGE OF SURGEONS IN IRELAND.

All persons proceeding to the study of Medicine may, if approved by the Council, become matriculated pupils of the College on payment of five guineas, and having done so, will enjoy the following privileges:—

1. They will, if matriculated before the preliminary examination, be admitted on payment of £1 1s. (half fee).

2. They will be permitted to study in the Library and Museums of the College.

3. Their fee for the First Professional Examination will be reduced by £5 5s.

DATES OF CONJOINT EXAMINATIONS.

Preliminary - - - -	March and September.
First Professional - - -	April, June, and October.
Second ,, - - -	April, July, and October.
Third ,, - - -	April, July, and October.
Final Examination - - -	April, July, and October.
Supplemental Final Examination	January.

REGULATIONS FOR CANDIDATES FOR THE DIPLOMA IN PUBLIC HEALTH.

The following regulations are compulsory on all Candidates presenting themselves for Examination after January 1st, 1902, except as undernoted.

Stated Examinations for the Diploma in Public Health commence on the first Tuesday of the months of February, May, and November, and occupy four days.

A special Examination for the Diploma can be obtained—except in the months of August and September—on payment of £10 10s., in addition to the ordinary Fees mentioned below, and on giving notice at least one fortnight before the date of the proposed Examination.

Every Candidate for the Diploma in Public Health must be a Registered Medical Practitioner, or hold a registrable Qualification. He must return his name to the Secretary of the Committee of Management under the Conjoint Scheme, Royal College of Physicians, Dublin, three weeks before the Examination, and lodge with him a Testimonial of Character from a Fellow of either of the Colleges, or of the Royal Colleges of Physicians or Surgeons of London or Edinburgh, together with certificates of the prescribed course of study.

Candidates registered as Medical Practitioners or entitled to be so registered after January 1st, 1890, must comply with certain Resolutions passed by the General Medical Council on December 1st, 1893, in regard to Diplomas in State Medicine.

*** The *Rules* as to study shall not apply to Medical Practitioners registered, or entitled to be registered, on or before January 1st, 1890.

*** The Executive Committee [of the General Medical Council] has power, in special cases, to admit exceptions to the Rules for the Registration of Diplomas in Sanitary Science, and report the same to the General Council.

The Fee for the Examination is Ten Guineas, which must be lodged in the Ulster Bank, Dublin, to the credit of the Committee of Management, at least two weeks before the date fixed for the

Examination. Fees are not returned to any Candidate who withdraws from, or is rejected at, any Examination. The Fee for re-examination is Five Guineas.

The Examination for the Diploma in State Medicine comprises the following subjects:—Chemistry and Chemical Physics, Meteorology, Engineering and Architecture, Hygiene, Morbid Anatomy, Vital Statistics, Sanitary Law. There is an Examination in the Laboratory, and also an Oral and Practical Examination.

IV.

Apothecaries' Hall in Ireland.

The First, Second, and Third Professional Examinations are held four times a year—viz., commencing the third Monday in January, April, July, and October.

The final Examinations are held in January and July.

The Fees payable for each Examination are as follow:—

First Professional	- -	£5	5 0
Second „	- -	5	5 0
Third „	- -	5	5 0
Final Examination	- -	6	6 0

Ladies who comply with the regulations will be admitted to these examinations.

Candidates may be admitted to a Special Examination, under special circumstances, which must be laid before the Examination Committee. If the Candidate's application be granted, an extra fee of Ten Guineas over and above the full fee is required.

Candidates already on the Register will receive the Diploma of the Hall, on passing an Examination in the subjects which are not covered by their previous qualifications, and on paying a fee of Ten Guineas. If Medicine or Surgery is required, additional fees will be charged.

Course of Study for the Diploma.

Candidates who desire to obtain the Letters Testimonial of the Apothecaries' Hall in Ireland must, before proceeding to the Final Examination, produce evidence of having been registered as a Medical Student for 57 months; also of having attended Courses of Instruction as follows:—

Winter Courses of Six Months.

One Course each of the following:—

Anatomy (Lecture).

Chemistry—Theoretical.

Midwifery.
Practice of Medicine.
Physiology, or Institutes of Medicine.
Surgery.
Dissections, two courses of six months each.

Courses of Three Months.

One Course of each of the following:—
Materia Medica.
Medical Jurisprudence.
Chemistry—Practical.
Practical Physiology and Histology.
Operative Surgery.
Physics.
Clinical Ophthalmology.
Biology.
Clinical Instruction in Mental Disease.
Pathology.
Vaccination.

Medico-Chirurgical Hospital, twenty-seven months, to be distributed at the Student's own discretion over the last four years of his study. The Candidate may substitute for nine months in this Hospital Attendance six months as a Resident Pupil. He will be required to present a certificate of having taken notes of at least six Medical and six Surgical cases recorded under the supervision, respectively, of a Physician and Surgeon of his Hospital.

Three months' study of Fever—which may be included in his twenty-seven months' Hospital Attendance—in a Hospital containing Fever Wards, and having taken notes of five cases of Fever—viz., either Typhus, Typhoid, Scarlet Fever, Small-pox or Measles.

Six months' Practical Midwifery and Diseases of Women during the Winter or Summer of the third or the fourth year, at a recognised Lying-in Hospital, or Maternity.

Three months' Practical Pharmacy, in a recognised Clinical Hospital or a recognised School of Pharmacy, or a year in the Compounding Department of a Licentiate Apothecary or a Pharmaceutical Chemist.

Each Candidate, before receiving his Diploma, must produce evidence that he has attained the age of twenty-one years.

Licentiates of this Hall are entitled to enter as Candidates for the Fellowship of the Edinburgh Royal College of Surgeons.

EXAMINATIONS FOR THE DIPLOMA.

All information relative to the Examinations may be obtained from the Registrar of the Apothecaries' Hall, 40 Mary-street, Dublin.

Dental Education and Examinations in Ireland.[a]

The Royal College of Surgeons in Ireland grants Diplomas in Dental Surgery under conditions of which the following is a synopsis:—

The Candidate must be twenty-one years of age before being admitted to the Final part of the Examination.

The Candidate must have passed three Examinations.

1. Preliminary (identical with the Medical Preliminary).
2. Primary Dental. Fee, £10 10s. (This Examination is much the same as the Second Conjoint Professional.)
3. Final Dental Examination. Fee, £10 10s. Candidates are examined in Dental Surgery and Pathology, and in Dental Mechanics, including the Metallurgy of the workshop.

   Candidates are required to do gold fillings, and construct mechanical work in the presence of the Examiners.

The Certificates required may be divided into General and Special.

1. The General Certificates required are about the same as those required by the Medical Student for the Second Conjoint Professional Examination.

The Special Certificates may be subdivided into—

1. Dental Hospital. 2. Practical Mechanical Dentistry.

1. Dental Hospital. Two years' attendance, with Lectures in Dental Surgery and Pathology and in Dental Mechanics. Fee, £28 7s.
2. Practical Mechanical Dentistry. Three years' instruction from a Registered Dentist. The fee for this is variable, but may be set down at from £50 to £150.

Large reductions in the Special Certificates required are made in the cases of qualified Medical Practitioners.

As regards Dental Hospital practice, full information is contained in the Calendar for 1902–3 of the School of Dentistry in connection with the Incorporated Dental Hospital of Ireland, Lincoln-place, Dublin. The Calendar may be obtained on applicaion to the Acting Dean, Dr. A. W. W. Baker.

[a] Fuller particulars can be obtained by application to the Registrar, Royal College of Surgeons, St. Stephen's-green, Dublin.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by Sir J. W. Moore, B.A., M.D., Univ. Dubl.; F.R.C.P.I.; F.R. Met. Soc.; Diplomate in State Medicine and Ex-Sch. Trin. Coll. Dubl.

Vital Statistics.

For four weeks ending Saturday, September 6, 1902.

IRELAND.

Twenty-two Town Districts.

The average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ending September 6, 1902, in the Dublin Registration Area and the twenty-one principal provincial urban districts of Ireland was 19·6 per 1,000 of their aggregate population, which, for the purposes of these returns, is estimated at 1,092,401. The deaths registered in each of the four weeks ended Saturday, September 6, and during the whole of that period, in the several districts, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

Towns, &c.	Week ending Aug. 16	Aug. 23	Aug. 30	Sept. 6	Average Rate for 4 weeks	Towns, &c.	Week ending Aug. 16	Aug. 23	Aug. 30	Sept. 6	Average Rate for 4 weeks
22 Town Districts	17·3	15·6	17·4	19·6	17·5	Lisburn -	13·6	9·1	18·2	31·8	18·2
Armagh -	6·9	6·9	0·0	13·7	6·9	Londonderry	15·4	9·0	17·9	21·8	16·0
Ballymena	14·4	14·4	14·4	23·9	16·8	Lurgan -	26·6	17·7	17·7	13·3	18·8
Belfast -	15·7	16·3	16·3	17·9	16·6	Newry -	25·2	0·0	16·8	25·2	16·8
Clonmel -	20·5	20·5	20·5	41·0	25·6	Newtownards	11·4	17·2	11·4	11·4	12·9
Cork -	17·8	13·7	22·6	9·6	15·9	Portadown -	10·3	5·2	0·0	15·5	7·8
Drogheda -	28·6	12·3	12·3	28·6	20·4	Queenstown	26·4	13·2	0·0	19·8	14·9
Dublin - (Reg. Area)	19·5	19·5	20·7	22·7	20·6	Sligo -	14·4	4·8	4·8	9·6	8·4
Dundalk -	16·0	8·0	8·0	16·0	12·0	Tralee -	15·9	5·3	26·4	10·6	14·6
Galway -	3·9	7·8	3·9	23·3	9·7	Waterford -	11·7	11·7	7·8	31·2	15·6
Kilkenny -	34·4	14·7	19·7	14·7	20·9	Wexford -	14·0	9·3	14·0	4·7	10·5
Limerick -	12·3	8·2	15·0	16·4	13·0						

The deaths (excluding those of persons admitted into public institutions from without the respective districts) from the principal zymotic diseases, registered in the 22 districts during the week ended Saturday, September 6, were equal to an annual rate of 3·0 per 1,000, the rates varying from 0·0 in thirteen of the districts to 9·8 in Kilkenny—the 3 deaths from all causes registered in that district including one from simple and ill-defined fever and one from diarrhœa. Among the 123 deaths from all causes registered in Belfast are 6 from measles, one from typhus fever, 6 from whooping-cough, one from diphtheria, one from simple fever, 4 from enteric fever, and 4 from diarrhœa.

DUBLIN REGISTRATION AREA.

The Dublin Registration Area now consists of the City of Dublin as extended by the Dublin Corporation Act, 1900, together with the Urban Districts of Rathmines, Pembroke, Blackrock, and Kingstown. The population of this Area is 378,761 ; that of the City being 293,394, Rathmines 33,208, Pembroke 26,025, Blackrock 8,759, and Kingstown 17,380.

In the Dublin Registration Area the births registered during the week ended Saturday, September 6, amounted to 205—101 boys and 104 girls ; and the deaths to 170—88 males and 82 females.

Deaths.

The registered deaths represent an annual rate of mortality of 23·4 in every 1,000 of the population. Omitting the deaths (numbering 5) of persons admitted into public institutions from localities outside the Area, the rate was 22·7 per 1,000. During the thirty-six weeks ending with Saturday, September 6, the death-rate averaged 24·0, and was 3·0 below the mean rate for the corresponding portions of the ten years 1892–1901.

The 170 deaths registered in the week ended Saturday, September 6, include 11 deaths from measles, compared with 20, 20, 16 and 11 deaths respectively from this disease registered in the four previous weeks. Of the 11 deaths 7 are reported to have occurred in hospitals. Scarlatina and enteric fever each caused 3 deaths ; 2 deaths were attributed to diphtheria, 9 to *diarrhœa*, and one to epidemic enteritis.

The following deaths were registered from tuberculous diseases, viz. :—24 from *phthisis*, 3 from tuberculous meningitis, 2 from tuberculous peritonitis, one from *tabes mesenterica*, and one from general tuberculosis.

Carcinoma caused 3 deaths, and *malignant disease* ("*cancer*") 6.

Thirteen deaths were due to diseases of the nervous system, including 7 from *convulsions*—all of these being of children under 5 years of age, of whom 6 were infants under one year old.

Diseases of the heart and blood-vessels caused 24 deaths, including 4 from *apoplexy, hemiplegia.*

The number of deaths from diseases of the respiratory system was 20, equivalent to an annual rate of 2·8 per 1,000; the rate for the corresponding period of the preceding 10 years was 2·6. The 20 deaths consist of 13 from bronchitis, 3 from broncho-pneumonia, and 4 from *pneumonia.*

Three accidental deaths (2 being caused by drowning) and one case of suicide were registered.

In 6 instances the cause of death was "uncertified," there having been no medical attendant during the last illness. These cases comprise the deaths of 2 infants under one year old and the deaths of 3 persons aged 60 years and upwards.

Fifty-seven of the persons whose deaths were registered during the week ended September 6 were under 5 years of age (33 being infants under one year, of whom 8 were under one month old), and 29 were aged 60 years and upwards, including 14 persons aged 70 and upwards, of whom 5 were octogenarians, and one (a woman) was stated to have been aged 103 years.

The Registrar-General points out that the names of causes of death printed above in italics should be avoided whenever possible in Medical Certificates of the Cause of Death.

STATE OF INFECTIOUS DISEASE IN DUBLIN.

(1.) Cases of Infectious Diseases Notified to the Public Health Committee of the Corporation.

Sir Charles A. Cameron, C.B., Medical Superintendent Officer of Health for the City of Dublin, has furnished information regarding the number of cases of infectious diseases in the City of Dublin notified under "The Infectious Diseases (Notification) Act, 1899," as follows:—

Week ending August	16,	1902.	..	..	204 cases.
,, ,, ,,	23,	,,	..	..	204 cases.
,, ,, ,,	30,	,,	..	..	191 cases.
,, ,, September	6,	,,	..	..	169 cases.

Of the 169 cases notified in the week ended September 6, 24 were erysipelas, 22 enteric fever, 14 scarlatina, 3 diphtheria, 92

measles, 8 "continued fever," one typhus fever, one "fever," one puerperal fever, and 3 varicella.

(2.) Cases of Infectious Disease in Rathmines Urban District.

Mr. Fawcett, Executive Sanitary Officer for Rathmines Urban Council, has furnished information regarding the number of cases of infectious diseases in the Urban District of Rathmines notified under "The Infectious Diseases (Notification) Act, 1889," as follows :—

Week ending	August	16,	1902,	..	..	2 cases.
,, ,,	,,	23,	,,	..	..	4 cases.
,, ,,	,,	30,	,,	..	..	1 case.
,, ,,	September	6,	,,	..	..	10 cases.

Of the 10 cases notified in the last week, one was enteric fever, 3 were scarlatina, 3 were diphtheria, 2 choleraic diarrhœa, and one was erysipelas.

(3.) Cases of Infectious Disease in Pembroke Urban District.

Mr. Manly, Executive Sanitary Officer for Pembroke Urban Council, has furnished information regarding the number of cases of infectious disease in the Urban District of Pembroke notified under "The Infectious Diseases (Notification) Act, 1889," as follows :—

Week ending	August	16,	1902,	..	..	6 cases.
,, ,,	..	23,	,,	..	..	3 cases.
,, ,,	,,	30,	,,	..	..	6 cases.
,, ,,	September	6,	,,	..	..	4 cases.

Of the 4 cases notified in the last week, one was measles, one was scarlet fever, and 2 were enteric fever.

(4.) Cases of Infectious Diseases under Treatment in Dublin Hospitals.

During the week ending Saturday, September 6, 29 cases of measles were admitted to hospital, 29 were discharged, there were 7 deaths, and 73 cases remained under treatment at the close of the week.

Twenty-four cases of enteric fever were admitted to hospital, 12 cases were discharged, and 65 cases remained under treatment at the close of the week.

Two cases of typhus fever were admitted to hospital, one was discharged, and 2 patients remained under treatment at the close of the week.

Eighteen cases of scarlatina were admitted to hospital, 15 cases

were discharged, there were 3 deaths, and 68 cases remained under treatment at the close of the week. This number is exclusive of 24 cases under treatment at Beneavin, Glasnevin, the Convalescent Home of the Cork-street Fever Hospital.

Five cases of diphtheria were admitted to hospital, 16 were discharged, one died, and 21 cases remained under treatment at the close of the week.

In addition to the above-named diseases, 5 cases of pneumonia were admitted to hospital, 7 patients were discharged, and 10 cases remained under treatment at the end of the week.

There were 2 cases of small-pox under treatment at the close of the week.

STATE OF INFECTIOUS DISEASE IN THE CITY OF BELFAST.

Dr. Whitaker, Medical Superintendent Officer of Health, has furnished information regarding the number of cases of infectious diseases in the City of Belfast notified under "The Infectious Diseases (Notification) Act, 1889," as follows :—

Week ending August	16,	1902,	..	..	49 cases.
,, ,, ,,	23,	,,	..	..	80 cases.
,, ,, ,,	30,	,,	..	..	46 cases.
,, ,, September	6,	,,	..	..	91 cases.

Of the 91 cases notified in the week ended September 6, 33 were enteric fever, 12 erysipelas, 6 diphtheria, 35 "continued fever," 2 scarlet fever, one was puerperal fever, and 2 were membranous croup.

ENGLAND AND SCOTLAND.

The mortality for the week ended Saturday, September 6, in 76 large English towns, including London (in which the rate was 16·8), was equal to an average annual death-rate of 15·9 per 1,000 persons living. The average rate for eight principal towns of Scotland was 13·9 per 1,000, the rate for Glasgow being 16·5 and for Edinburgh 12·4.

Meteorology.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ N., *Long.* 6° 15′ W., *for the Month of August*, 1902.

Mean Height of Barometer,	29·908 inches.
Maximal Height of Barometer (1st, at 9 a.m.),	30·225 ,,
Minimal Height of Barometer (18th, at 4 p.m.),	29·496 ,,
Mean Dry-bulb Temperature,	57·3°.
Mean Wet-bulb Temperature,	54·8°.
Mean Dew-point Temperature,	52·4°.
Mean Elastic Force (Tension) of Aqueous Vapour,	·395 inch.
Mean Humidity,	84·2 per cent.
Highest Temperature in Shade (on 18th),	71·2°.
Lowest Temperature in Shade (on 4th & 11th),	44·8°.
Lowest Temperature on Grass (Radiation) (30th),	39·9°.
Mean Amount of Cloud,	59·2 per cent.
Rainfall (on 18 days),	2·949 inches.
Greatest Daily Rainfall (on 6th),	·924 inch.
General Directions of Wind,	N.W., N.E., W.

Remarks.

A changeable, cool month, with a continued prevalence of polar winds. A rainstorm of considerable violence on the 5th and 6th was preceded by marked visibility on the 4th—a beautiful day in Ireland—when Snowdon and the whole range of the Welsh mountains were seen from the Wicklow uplands. Only once—on the 18th—did the thermometer rise above 70° in the shade in Dublin, whereas on 3 nights temperature fell below 45° in the screen. Bright sunshine was estimated at 162·75 hours, or a daily average of 5·25 hours, compared with a twenty-years' average of 162·7 hours, or 36 per cent. of its possible duration, recorded at the Ordnance Survey Office, Phœnix Park. Extraordinary local "splashes" of rain occurred on the 24th—at Kingstown (·220 inch in 10 minutes), on the 26th in Dublin, where large hailstones fell, and on the 27th at Blackrock.

In Dublin the arithmetical mean temperature (58·4°) was distinctly below the average (59·7°); the mean dry-bulb readings at 9 a.m. and 9 p.m. were 57·3°. In the thirty-seven years ending with 1901, August was coldest in 1881 (M. T. = 57·0°), and warmest in 1899 (M. T. = 63·4°). In 1901 the M. T. was 60·5°.

The mean height of the barometer was 29·908 inches, or 0·011

inch above the corrected average value for August—namely, 29·897 inches. The mercury rose to 30·225 inches at 9 a.m. of the 1st, and fell to 29·496 inches at 4 p.m. of the 18th. The observed range of atmospheric pressure was, therefore, 0·729 inch.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 57·3°. It was 1·2° below the value for July, 1902. Using the formula, *Mean Temp.* = *Min.* + (*Max.* — *Min.* × ·47), the mean temperature was 58·0° or 1·3° below the average mean temperature for August, calculated in the same way, in the thirty years, 1871–1900, inclusive (59·3°). The arithmetical mean of the maximal and minimal readings was 58·4°, compared with a thirty years' average of 59·7°. On the 18th the thermometer in the screen rose to 71·2°—wind, S.W.; on the 4th and 11th the temperature fell to 44·8°—wind, N.W. The minimum on the grass was 39·9° on the 30th.

The rainfall was 2·949 inches on 18 days. The average rainfall for August in the thirty-five years, 1866–1900, inclusive, was 3·040 inches, and the average number of rainy days was 17. The rainfall, therefore, was slightly below the average, while the rainy days were slightly above it. In 1900 the rainfall in August was very large—5·871 inches on 17 days, establishing a record for August in Dublin; in 1889, 5·747 inches were registered on 22 days. On the other hand, in 1884, only ·777 inch was measured on 8 days. In 1901, 2·952 inches fell on 13 days.

High winds were noted on only 4 days, and never attained the force of a gale. Temperature reached 70° in the screen on only one day, compared with 18 days in August, 1899, 6 in August, 1900, and 7 in August, 1901. The atmosphere was foggy on the 5th, 15th, 17th, and 31st. Hail fell on the 26th. Lightning was seen on the 7th and 29th. Solar halos appeared on the 15th and 16th. There was a lunar halo on the 16th.

The rainfall in Dublin during the eight months ending August 31st amounted to 18·456 inches on 133 days, compared with 14·384 inches on 106 days in 1901, 23·480 inches on 146 days in 1900, 18·200 inches on 117 days in 1899, 16·516 inches on 124 days in 1898, 19·388 inches on 149 days in 1897, 14·464 inches on 120 days in 1896, 9·455 inches on 96 days during the same period in 1887, and a thirty-five years' average of 17·660 inches on 130 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall was 3·520 inches on 16 days, compared with 3·625 inches on 15 days

in 1901, 5·995 inches on 16 days in 1900, 2·640 inches on 11 days in 1899, 3·185 inches on 18 days in 1898, 6·195 inches on 27 days in 1897, and 1·245 inches on 14 days in 1896. The heaviest falls in 24 hours were 1·580 inches on the 6th and ·590 inch on the 5th. The total fall since January 1 amounts to 23·161 inches on 111 days, compared with 19·685 inches on 100 days in 1901, 29·326 inches on 136 days in 1900, 25·630 inches on 120 days in 1899, 17·830 inches in 112 days in 1898, 25·945 inches on 143 days in 1897, 14·327 inches on 91 days in 1896, 22·685 inches on 107 days in 1895, 25·206 inches on 131 days in 1894, and 16·341 inches on 106 days in 1893.

Dr. B. H. Steede reports that at the National Hospital, Newcastle, Co. Wicklow, the rainfall was 4·084 inches on 14 days, compared with 3·055 inches on 15 days in August, 1901, 3·988 inches on 12 days in 1900, 1·877 inches on 13 days in 1899, 3·803 inches on 16 days in 1898, and 4·526 inches on 20 days in 1897. The heaviest falls were 1·567 inches on the 6th, and ·672 inch on the 5th. Since January 1, 1902, the rainfall at this Second Order Station has been 22·358 inches on 122 days, compared with 16·646 inches on 100 days in the first 8 months of 1901, 24·144 inches on 130 days in the same period of 1900, 23·748 inches on 117 days in that of 1899, and 20·101 inches on 110 days in that of 1898. The maximal temperature in the shade was 65·8° on the 18th, and the minimum temperature was 44·0° on the 29th.

Dr. Arthur S. Goff reports that at Lynton, Dundrum, County Dublin, rain fell on 18 days, the total measurement being 2·73 inches, and the heaviest rainfall in 24 hours being 1·16 inches on the 6th. The corresponding figures for August, 1901, were 3·11 inches on 16 days. The mean shade temperature was 58·7°, the range being from 70° on the 18th to 44° on the 31st. In August, 1901, the M. T. was 60·5°.

At Cork the rainfall was 2·89 inches, or 0·68 inch below the average, the maximal fall in 24 hours being 0·72 inch on the 7th. There were 15 rainy days.

At the Ordnance Survey Office, Phœnix Park, Dublin, rain fell on 18 days to the amount of 2·371 inches, the greatest measurement in 24 hours being ·825 inch on the 6th.

Dr. J. Byrne Power, F.R. Met. Soc., Medical Superintendent Officer of Health at Kingstown, Co. Dublin, reports that the mean temperature at that health resort was 58·9°, being 0·4° below the average for August during the previous four years, the extremes

being—highest, 72·0° on the 18th; lowest, 43·5° on the 5th. At Bournemouth the mean temperature was 61·3°, or 1·6° below the average for August during the previous four years, the extremes being—highest, 78° on the 30th; lowest, 46° on the 2nd. The maximum temperature was above 70° on 14 days at Bournemouth, whereas it reached 70° on only two days at Kingstown. The mean daily range of temperature at Kingstown was 12·5°, whereas at Bournemouth it was 15·6°. The mean sea temperature at Sandycove bathing place was 58·4°. The mean height of the barometer (corrected) was 29·881 inches. The mean humidity of the air was 76 per cent. The rainfall amounted to 2·43 inches on 15 days, whereas at Bournemouth it was 4·4 inches on 18 days. The greatest daily rainfall was 1·11 inches, in 12 hours, on the 6th, and at Bournemouth 0·45 inches on the 9th. The total duration of bright sunshine was 175·5 hours, whereas it was 171·9 hours at the Ordnance Survey Office, Phœnix Park, 158·9 hours at Valentia, 184·8 hours at Parsonstown, 187·1 hours at Southport, and 154·9 hours at Eastbourne.

SEVERE ABDOMINAL SYMPTOMS USHERING IN PNEUMONIA OR PLEURISY.

THAT a pneumonia or a pleurisy may occasionally set in with so markedly pronounced abdominal symptoms as to mislead in the diagnosis at first is not new, but the cases reported by P. Hampeln (*Zeitsch. f. klin. Med.*, Vol. XLV., Nos. 5 and 6) are unique in that three resembled at first perforative peritonitis and one intestinal obstruction. In each case operation was seriously considered until the pulmonary symptoms became more pronounced. Occasionally one meets with cases where an intestinal occlusion seems to exist, where pneumonic foci are present in the lungs, and where at an autopsy no real cause for the obstruction can be found, and yet everything seems to point to the abdomen as the primary seat of the disease. The possibility of a dynamic ileus, with secondary involvement of the lungs, must here be taken into consideration, especially since more or less consolidation is not rare with intestinal obstruction of any kind. The prominent abdominal symptoms in purely pulmonary conditions are best explained by involvement of the phrenic nerve and the diaphragm, and, in accordance with this, the pneumonias always involved the lower lobe.—*Med. News*, New York, Sept. 6, 1902.

PERISCOPE.

LITERARY NOTES.

A NEW edition of Dr. Sydney Stephenson's "Ophthalmic Nursing" will shortly be issued by The Scientific Press. This useful work may very advantageously be studied by nurses and dressers who are about to enter the ophthalmic service of a hospital.

Messrs. J. & A. Churchill announce the following new books and new editions for publication this autumn:—"A Manual of Hygiene," by Dr. Hamer, of St. Bartholomew's Hospital. "Pathological Anatomy and Histology," by Dr. Lazarus Barlow, of the Westminster Hospital. "A Handbook of Clinical Medicine," by Dr. T. D. Savill. "Cancer of the Stomach," by Dr. Fenwick and Dr. W. Soltau Fenwick. "Obstinate Hiccough," by Dr. Knuthsen. "The Chemistry of the Terpenes," by Dr. Heusler, translated by Dr. Pond. "Electric Lighting," edited by Mr. W. J. Dibdin; being the fourth volume of Groves and Thorp's "Chemical Technology." The third edition of Morris's "Treatise on Anatomy," with more than 200 new or altered cuts. The fifth edition of Starling's "Elements of Human Physiology." The ninth edition of "Heath's Practical Anatomy," revised by Mr. J. Ernest Lane. The second edition of Coles' work on the Blood. The fourth edition of Haig's "Diet and Food." The ninth edition of Bloxam's "Chemistry; Inorganic and Organic."

CURE OF ADVANCED CASE OF BANTI'S DISEASE.

SCHIASSI reported and exhibited, at a recent meeting of the Bologna Medical Society, a woman completely cured after having been a year before in the third or final stage of Banti's disease—that is, primary spleno-megalia with anæmia, ascites, and lesions of the liver. He considered the removal of the spleen inadvisable on account of the advanced stage of the disease, and restricted his intervention to laparotomy and fixation of a large expanse of the surface of the spleen to the parietal peritoneum. This cured the transudation into the peritoneum, but the anæmia persisted, and the patient was given 12 to 15 gm. of fresh bone marrow from the epiphyses, and 1 to 3 gm. of hepatic extract. Improvement was rapid and permanent, and in three months the red blood corpuscles numbered 4,200,000 to 3,800,000 whites. After

the liver had been relieved of its hyperæmia, by the operation diverting the circulation, the still intact liver cells were able to respond with hyperfunction to the stimulus of the liver extract. Schiassi is aware of only two other cases of Banti's disease that recovered after reaching this advanced stage. He thinks that this comparatively slight operation, followed by appropriate organic therapy, opens a new era in the treatment of this disease.—*Journal of the Amer. Med. Association*, Aug. 9, 1902. [*Cf.* page 211, *supra.*]

BACTERIOLOGY OF PULMONARY GANGRENE.

IN five cases of pulmonary gangrene, four of which were chronic and one acute, W. Ophuls (*Jour. of Med. Research*, June, 1902) found a number of bacilli with the following characteristics: they were long, slender, more or less curved rods or threads with irregularly staining protoplasm, occurring in clusters and showing true branching. With methylene blue they stained badly, better with dilute carbol-fuchsin, and very well with Gram's method. After having been stained with Ziehl's carbol-fuchsin the bacteria decolorised in acid alcohol, but not in aqueous solution of sulphuric acid. Attempts at cultivation failed, except in one case, and here only a scanty growth was obtained. It is most likely that these acid-proof bacilli belong to the class of actinomyces, and are of a more saprophytic nature, most probably being derived from the mouth.—*Medical News*, New York, Sept. 6, 1902.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

Odol.

EVERY specialist is aware that a faultless mouth-wash must fulfil six requirements—(1) The mouth-wash must be absolutely harmless—that is to say, non-poisonous. (2) It must be neutral—that is to say, neither acid nor alkaline. The acids attack the inorganic part of the teeth, the hydrocarbonate of lime; and the alkalies the organic parts. (3) It must not be caustic, but absolutely non-irritant, even to the highly sensitive mucous membrane of the mouth. (4) It must have no sharp or disagreeable taste. But a useful mouth-wash must be not only thus free from all injurious qualities, but also beneficially active—that is to say, (5) deodorising and cleansing; and (6) antiseptic. Odol has been offered as an ideal mouth-wash, fulfilling all the above requirements. It is apparently an alcoholic solution of odolol,

flavoured with peppermint and sweetened with gluside. The antiseptic "odolol," to which it owes its mouth-cleansing property, is a chemical substance, of which the formula is $C_{33}H_{32}O_7$, obtained from coal-tar. It stands in a near chemical relation to salol, $C_{13}H_{10}O_3$, but differs from it on the one hand in its physical constitution, and also in its more unstable combination. The latter explains its capacity for being broken up, which will be referred to below. Salol is unfitted for a water for rinsing the mouth, as in the rinsing-water it separates again into a crystalline form. Odolol is a golden-yellow, thickly liquid oil. It is easily dissolved in alcohol of high percentage, but is, on the contrary, insoluble in water, with which it forms a milky emulsion, in which its very small particles appear very minutely divided as small drops. Its reaction is completely natural—that is to say, neither acid nor alkaline. If odolol is treated with a lye, it decomposes and breaks up into its constituents salicylic acid and phenol, both of which can be recognised by characteristic chemical reaction. Different substances show these results of the breaking up of odolol, and, amongst others, salol; and this is the reason different analysts have arrived at the mistaken conclusion that the antiseptic of odol is salol. That this is a mistake is shown by the fact that salol can without difficulty be isolated from an alcoholic solution of salol, and can then be identified by its crystalline structure, by its melting point, &c. In the case of odol this is impossible. Odol breaks up into its effective antiseptic elements, not alone under the influence of strong lyes, for the chemical forces, which are effective in the mouth, also bring about this result. The living cells of the mucous membrane of the mouth, the saliva contained in the mouth, and also the germs themselves which occasion putrefaction effect this decomposition, in consequence of which the compounded substances then first acquire their properties of destroying bacteria. It is upon this peculiarity that the action of odol in the mouth is based. The result is that odolol becomes effective only when it is required, and this property makes it seem as if it was purposely intended for the preservation of the mouth. A second fundamental peculiarity of odol is the durability of its effectiveness. These two properties (action at a given moment, and continuous action) belong, in the present state of science, to odolol alone. (See Hefelmann, *Allgemeine medicalische Central-Zeitung*, 1899, Nos. 55–56. Röse, *Centralblatt für Bacteriologie, Parasitenkunde und Infectionskrankheiten*, XXVI. Vol., 1899, No. 13.) Odol is dispensed in small flasks fitted with

a stopper of ingenious construction. For use, 20 to 30 drops are shaken into a tumbler containing warm water. The mixture may then be used as a mouth-wash, a gargle, or a dentifrice. The flavour is grateful and refreshing.

Friedrichshall Water.

WE have examined specimens of this water with the view of ascertaining whether or not its composition was actually what it is represented to be. We find that this is actually the case. The salts of sodium and magnesium to which its therapeutic properties are ascribed seem to be present in admirably adjusted proportions. It would also seem certain that the water is not, as some waters are, of inconstant composition. Its aperient qualities are so well known that little need be said of them other than that it is a mild aperient, possessing but a slightly unpleasant flavour, and very certain in its action.

Antiphlogistine.

UNDER this name the Denver Chemical Manufacturing Company have placed in the market an external application for inflammation and congestion, which has become very popular in the United States of America within the past ten years. The Firm state that the application is composed of chemically pure glycerine, boric acid, salicylic acid, iron carbonate, peppermint, gaultheria, eucalyptus, and iodine, combined with the base dehydrated silicate of alumina and magnesia. Antiphlogistine is described as a perfectly harmless, soft and pliable, non-irritating, non-toxic, soothing, and antiseptic poultice and surgical dressing. It should be kept free from water. When about to be applied the preparation should first be warmed, then spread on the skin over the inflamed or affected part to the depth of an eighth of an inch at least (the thicker the better), and covered with cotton or heavy cloth. Where the part to be dressed is sensitive, the antiphlogistine should first be spread on cloth, afterwards applied gently. In from 12 to 36 hours the layer will peel off easily, like the husk of a banana. The preparation is put up in "small" (10½ ozs.), "medium" (17½ ozs.), and "large" (34½ ozs.), seamless and air-tight packages, costing 2, 3, and 5 shillings, respectively. As it is very hygroscopic, the lid of each package should be kept on when the preparation is not in use. The Company has offices in Denver, Chicago, New York, and London (18 Jeffrey's-road, Clapham-road), but "antiphlogistine" can be obtained through any apothecary or pharmaceutical chemist.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. XVI.—*Diabetes Insipidus with Suicidal Impulses, greatly Relieved and partially Cured by Hypnotic Suggestion.* By JOHN R. O'BRIEN, M.D. (Brux.), L.R.C.P.I., L.R.C.S.I., Lowestoft, Suffolk.

THAT hypnotism can influence secretion and absorption either in arrest or acceleration has been laid stress upon by many writers. Milne Bramwell—*e.g.*, in the "Encyclopædia Medica," Vol. V.—notes the excitement or temporary arrest of thirst. Bernheim, in his exhaustive practical work on "Suggestive Therapeutics," frequently applies to it; also many other authorities; but I have not yet come across any of the articles written upon this so-called occult science by any medical men which report upon any cases of diabetes where suggestion had such marvellous control on the course of the disease. That the following case will show that hypnotism is a therapeutic agent of unquestionable value, and should definitely take its place in medicine and science as a remedy in many of these cases, I think cannot be denied. However or in what manner the psychical state of hypnotism alleviated the symptoms, and brought about an almost cure (at least at present), of this case I am not prepared to discuss, but in the light of the supposed pathology of the disease, that it is a vasomotor paralysis of the nerves controlling the renal vessels, one may surmise that the nervous system readily responded to suggestion.

Case.—A man, aged thirty-five, of powerful build, consulted me in the early part of last March. He complained of headache, want of sleep, and marked depression of spirits. He informed me that a domestic tragedy had occurred which rendered his life unbearable, and that he felt an irresistible impulse to do away with himself, and that he could no longer fight against it, and that, except I could do something to remove these feelings, he should surely succumb to them. I inquired into his domestic trouble, and found that his wife had suddenly left him, and this evidently accounted for his present condition of mind. On further inquiry I elicited the fact that he was passing an enormous amount of urine; he was obliged to get out of bed frequently during the night to relieve himself. He was also complaining of intense thirst. To use his own words, he could not pass a tap without quenching his thirst. He had been drinking on an average about sixteen pints of water per day for some weeks, and had been passing about the same quantity of urine. This on examination contained no albumen, no sugar, and presented a pale yellow colour, and yielded a specific gravity of 1012. There was marked anorexia (an unfavourable symptom). Valerian in the form of tincture in doses of ʒ ss., with spt. chlof. ♏ x. and camphor water was prescribed thrice daily. This had a fair trial, but produced no improvement. Various drugs were then tried, viz., ergot and belladonna, nitro-glycerine, and finally electricity in the form of galvanism was applied, with the positive pole to the back of the neck, and the negative pole to the epigastrium—the strength of the current being gradually increased from one to five milliampères, the duration of the application being from one to five minutes; this treatment was continued for a fortnight, the man meanwhile getting worse, and attempting to take his life several times. I advised him to try hypnotism. He readily agreed, and I succeeded in putting him into the somnambulistic state at the first sitting. Various suggestions were made—sleep, disappearance of his morbid ideas, and hunger. I hypnotised him daily, and at the end of a week his mind was quite changed, and he felt, as he said, quite himself again. Thirst and polyurea, however, still continued. He was hypnotised now daily for a period of two months, suggestions being given that he would pass less water daily and drink less. These were very successful, till finally at the end of the two months he was passing about six pints only, and drinking about three pints. All his morbid ideas have now gone. I see him occasionally, and to-day he remains in good health and would deceive almost an expert.

ART. XVII.—*Suprapubic Prostatectomy.*[a] By EDWARD H. TAYLOR, M.D. (Univ. Dubl.); Fellow of the Royal College of Surgeons in Ireland; Surgeon to Sir Patrick Dun's Hospital; University Examiner in Anatomy, Trinity College; Examiner in Surgery, Royal College of Surgeons.

PATHOLOGY.

THE pathology of senile enlargement of the prostate opens up a wide field, and is a subject which I can only allude to on the present occasion in a cursory manner. It is especially deserving of notice that the changes which the prostate undergoes are not, as a rule, by any means uniform, but differ very much in different cases. It is possible, however, to distinguish *two main forms of enlargement.* In one the prostate is enlarged as a whole, in the other the enlargement is of a partial character. In cases of general enlargement the organ may reach an enormous size, so as to occupy a large part of the lower pelvic region, and to be readily detected, on digital examination, from within the rectum as a large, firm mass, the peripheral limits of which cannot be completely defined. In some cases the tissues of the prostate contribute in equal proportion in its enlargement—a general hyperplasia, in fact, but this is probably rare. More commonly there is a predominance either of the fibro-muscular or glandular element, the latter being probably the more frequent. The newly-formed gland tissue takes the form of *encapsuled adenomatous tumours*, round or oval on section, and quite distinct to the naked eye. As the prostate enlarges, the lateral lobes encroach upon the urethra internally, narrowing its lumen from side to side, and reducing it to an antero-posterior slit. In addition, they expand the muscular cortical zone and the outer fibrous investment of the prostate, often to an extreme degree. As these changes are taking place, the ducts of the seminal vesicles and the prostatic tissue by which they are surrounded are not unfrequently pushed aside in a downward and backward direction. I have already alluded to the normal prostatic area of the bladder floor, and have shown

[a] Read before the Section of Surgery in the Royal Academy of Medicine in Ireland, on Friday, February 28, 1902.

how it is related to the basal aspects of the lateral lobes and of the middle lobe on each side of, and behind, the urethral orifice. Now, in well-marked examples of general prostatic enlargement, such as are represented by the specimens which, by the kindness of Professor A. H. White, I exhibit, it will be seen that the appearances presented from within the bladder are evidently due to a general uprising of this prostatic area. The lateral lobes in the course of enlargement rise upwards and bulge into the bladder cavity as rounded or knob-like projections, connected below by a broad base of attachment with the main mass of the prostate. The enlarged middle lobe lies between the lateral lobes, but is separated from them usually by deep grooves, which converge in front to the urethral orifice. This middle lobe, as already noted, has a great tendency to obstruct the opening; as a rule it presents a sessile attachment to the floor of the bladder, but in some rare cases it is attached by a pedicle, and under such conditions has a marked tendency to fall forwards and occlude the urethral orifice after the manner of a ball valve. *The greatly increased degree of curvature* which the urethra acquires in cases of enlarged prostate is to be attributed, no doubt for the most part, to the hypertrophic changes which take place in the middle lobe, as the result of which it rises up so as to overhang the urethral orifice, or to jut from behind forwards against it as a rigid wall. The enlargement of the middle lobe occasionally takes the form of a *transverse bar*, or ridge, stretching across the bladder floor immediately behind the urethral orifice.

A general enlargement of the prostate, due to an increase in its *fibro-muscular* element, is sometimes observed. The organ may not reach a very large size, but it is important to note that its consistency is very firm and tough. It is with this form that the enlargement of the middle lobe shows a tendency to assume the form of a dense bar behind the urethral orifice, to which I have just alluded. Another important fact relating to this fibro-myomatous type of enlargement is that *it does not lend itself to enucleation* in the same way as the glandular form. Should the attempt be made it will almost certainly be attended by very great ›age, and perhaps fatal consequences. A fair estimate

of these fibro-muscular enlargements may sometimes be obtained by the finger in the rectum, but this is not by any means a reliable method of diagnosis.

So far I have been speaking of general enlargement of the prostate. In the other group to which I have referred the enlargement, instead of being uniform, is greatly accentuated in some parts. It is by no means uncommon, for example, to find the middle lobe enlarged out of all proportion to the other divisions of the prostate, or one lateral lobe may so enlarge as to greatly exceed the other. The result of this irregularity is that the prostate is not only enlarged, but it is also distorted, and for this reason, as one might expect on *à priori* grounds, obstruction to the urinary outflow is by no means unfrequently a marked feature of these cases. It is brought about mainly by the obstruction at the vesical orifice through the agency of the enlarged middle lobe.

SURGERY.

With this brief *résumé* of the pathology of senile enlargement of the prostate, I shall now proceed to consider its operative treatment, in so far as it lies within the scope of my paper.

To put the matter within as narrow a compass as possible, I should say that the aim of suprapubic prostatectomy should be :—

1. To remove *en masse*, and by a process of enucleation, those portions of the enlarged lateral lobes which lie beside the urethra and exert a compressing influence upon it.

2. To remove the enlarged middle lobe in the same manner, seeing that its action in a large percentage of cases is to obstruct the bladder outlet.

3. To render as level as possible the prostatic area of the bladder floor, so that it may occupy the same plane as the area which lies immediately behind it.

I consider it advisable to put the patient on special treatment for a few days beforehand, with the object of improving the urinary condition, cystitis being a frequent complication in these cases. The bowels, too, are carefully attended to, the large intestine being thoroughly emptied.

OPERATION.

The bladder is washed out, and it is well to flush out the rectum also with a stream of sterilised water, these preliminary procedures being conducted by an assistant. About 12 ozs. of weak boric solution are injected into the bladder and allowed to remain; a large-sized Lister bougie is then introduced and retained *in situ*. The patient is placed upon a low operating table in the Trendelenburg position; the bladder is exposed in the usual way and opened by a vertical incision. The finger is introduced and the condition of the prostate examined, the shape and consistency of each lateral lobe resembling very much that of the cervix uteri. The bladder is now secured by four temporary *silkworm-gut sutures* to the parietal wound. This, I find, is a wise precaution, as it prevents fluids making their way into the loose peri-vesical tissue during the later manipulations. Access to the prostate through a suprapubic opening is much facilitated if an assistant introduce *two fingers* into the rectum and press the prostate upwards and forwards. During the enucleation process I regard this indispensable, for, in addition to bringing the field of operation well into view, the prostate is firmly supported and does not recede before the finger. The enucleation is carried out in the following way:—An incision about three-quarters of an inch in length is made over the most prominent part of one lateral lobe; through it the index finger is introduced and the process of enucleation commenced. The mass is freed outside, in front, and also behind; it is then peeled away from the urethra, and throughout the entire procedure the greatest care should be taken to avoid all rough manipulation and tearing of tissues. When once the finger comes into contact with the periphery of the growth, its enucleation is not a matter of great difficulty—at least I have not found it so. The enucleation of the mass which causes enlargement of the middle lobe can be effected through one of the lateral incisions. During the concluding stages I find it facilitates matters greatly to introduce one or two fingers into the rectum, and to carry out the intra-vesical manœuvres with the other hand. The finger, too, within the rectum serves as a guide, and enables one to judge of the depth of tissue which intervenes.

Hæmorrhage is sometimes free, more, however, in the form of a parenchymatous oozing than from individual vessels of large size. I usually treat it by a stream of hot sterilised water. When the enucleation has been completed, the bladder wound is closed, with the exception of its lower angle, through which a wide rubber tube is introduced for the purpose of affording subsequent drainage.

In conclusion, I would briefly summarise the more important facts which strike me as being worthy of consideration in connection with suprapubic prostatectomy :—

1. It is an operation from which good results may be expected in suitable cases. By these I mean cases in which the enlargement is due to encapsuled masses, especially of the adenomatous type. When the enlargement affects the prostatic tissues in a more or less general manner it is evident that an attempt at prostatectomy such as I have described will result in failure. It is well adapted also to cases in which the enlargement is mainly confined to the middle lobe, whether it be due to an adenomatous or a fibro-myomatous growth.

2. It is doubtful if the operation should, as a rule, be attempted in very old men, if their vital powers have reached a low ebb, and in whom it is probable that there is grave organic renal disease associated with chronic cystitis of long standing.

3. In the absence of severe cystitis, and provided the patient's general health is fairly good, the suprapubic operation which I have just described may be employed without obvious risk.

4. In prostatectomy, as in other operations of an extensive character, it is desirable that the various steps of the procedure be carried out in as expeditious a manner as possible, consistent of course with safety and efficiency. It is an operation in the performance of which a definite policy can be followed, and becomes much easier in proportion as one acquires familiarity with its details.

5. Suprapubic prostatectomy, as practised at the present day, remains in its essential features the operation of M'Gill and of the Leeds School. It aims at enucleation of encapsuled growths, and meets all the requirements of the case.

Within a comparatively recent period the claim put forward

by Freyer for "total prostatectomy" has been largely discussed, and widely divergent opinions have been expressed as to its feasibility.

Were total extirpation of the prostate carried out, what would it mean? It would of necessity involve the removal or extensive laceration of the prostatic urethra, to which there adheres, even in the most marked cases of enlargement, a certain amount of the prostatic fibro-muscular tissue, and which remains connected with the ducts of the seminal vesicles. These, as I have already shown, in cases of enlarged prostate, are displaced downwards and backwards with their surrounding tissue, and are to be regarded as important supports of the prostatic urethra after the enucleation process has been completed.

Total extirpation would also imply the detachment from its surroundings of the outer fibrous investment of the prostate and of its thinned cortical muscular layer. Now this would not only be a totally unwarranted procedure, but in the highest degree dangerous, as it would inevitably mean the laceration of the veins of the prostatic venous plexus, which lie in close contact with—embedded I might say—in this outer fibrous layer, which Freyer regards as the true prostatic capsule. As a matter of fact, this fibrous layer is very tough, and it is very fortunate that it is so; whereas, on the other hand, the encapsuled adenomatous masses are of a much softer and more friable consistency. The result is, that when the finger is introduced through the incision in the bladder floor, it finds its way, following the direction of least resistance, between the outer tough fibrous investment of the prostate or its very thin and expanded cortical layer and the encapsuled mass. This is really the true explanation of the ready manner by which the enucleation of enormous tumours may be carried out. I quite realise that very little prostatic tissue may be left behind after the process of enucleation has been completed. In such a case the index finger in the rectum may fail to detect any evidence of the organ whatever, all sense of resistance having disappeared, but nevertheless it would be incorrect to say that the prostate had been entirely removed.

ART. XVIII.—*Sex, and its Relation to Evolution.*[a] By W. GEOFFREY HARVEY, ex-Medical Scholar, Sen. Mod., B.A. (Dub.).

PROBABLY no questions are of such wide interest to biologists as those connected with evolution, inheritance, and development; and when we consider that among all the higher animals each individual is the product of a male and female parent, and is developed with qualities inherited from both, while the species itself is, in all probability, the result of sexual union of remote ancestors, the discussion in this Society of "Sex and its Relation to Evolution" calls for no apology. It must, however, be admitted at the outset that only a very sketchy description of the problem is here given. Probably a great many will learn nothing from the paper which they did not know before. The only attempt made is to give an *outline* of the main problems involved, with some of the more important theories and experiments connected with them. A full discussion of these problems cannot fail to be of interest. Should this paper serve as a stimulus to start such a discussion, its shortcomings will perhaps be overlooked.

To begin at the beginning, questions concerning the *genesis* or *origin* of sex are naturally the first to suggest themselves. How did sex commence? Is sex a common, primary attribute of living matter, or has it itself arisen in the course of evolution from a primitively sexless material? The lower we descend in the scale of living beings the less evident are the differences between the sexes, and the less necessary is the sexual method of reproduction. Thus, among bacteria reproduction is entirely asexual. In some protozoa, too, asexual reproduction is the only method known; in others, individuals unite temporarily or permanently for purposes of reproduction. This union may be effected by many individuals, together forming a plasmodium, or more commonly by two, apparently similar, organisms. Sometimes, however, the conjugating individuals are differentiated in appearance and habit, as in vorticella, where a free-swimming form unites with a larger passive individual, which is anchored by a stalk and there-

[a] 'The Prize Essay of the Dublin University Biological Association' 1901–02.

fore incapable of free movement. Here, then, we have an early example of sexual dimorphism. We see that sex is not common to all living matter, and we may conclude that it is a property, in all probability, acquired at an early stage in the history of living organisms.

As to how and why sex should have been originated, and perpetuated so universally throughout the living world, it is difficult to form any certain notion.

The union of like forms among the protozoa is usually regarded as a method of effecting *some mutually advantageous exchange* between cells, each of which has become deficient in some property required for its continued existence. When rejuvenescence has been thus accomplished the cell commences to grow and divide rapidly, so that in a short time a number of cells have resulted from the union of two. It would, then, be natural to expect that the most unlike cells—*i.e.*, those whose metabolism had been affected most differently—would be of greatest mutual service in reviving each other. However, as cells may theoretically vary in their metabolism in countless different ways, we might at first sight expect to find large numbers of combinations of differentiated cells, or, in other words, an infinity of sexes. But, consider that if any cell vary from the original stock in such a way that its peculiar change of structure, function, or metabolism gives it an advantage over its fellows in effecting sexual union, then by applying the principle of sexual selection to cells we see that in the course of many generations we shall find similarly altered cells in predominance. Now any variation in the direction of *increased mobility* would be of such a nature. The greater the mobility of any cell the greater its chances not only of coming in contact with another cell, but also of its meeting a cell which has lived among different surroundings and conditions, and whose metabolism therefore has been affected differently.

Now, if advantage in effecting sexual union occur thus to a cell through any peculiar alteration from the normal, by hypothesis similar benefit will be felt by such cells as are most differentiated in an opposite direction. Thus the most markedly *sedentary* cells will, in general, be indirectly benefited by the advantage conferred on the most active; for the union

of such dissimilar cells will give rise to the most vigorous offspring.

We conclude, then, that in the struggle for existence the progeny of cells differentiated with regard to motion will be the best fitted to survive. Moreover, the union of such cells will be effected the more readily, as the quiescent cell, in absorbing food and expending little energy, will be possessed of a store of nutriment most inviting and satisfactory to the cell which has wasted his substance in riotous activity!

This description of motile and passive cells can scarcely fail to call to mind the well-known difference in the male and female reproductive cells of higher organisms, the large passive ova, and the small, but highly active, sperm.

It might, however, be argued, that such a method of natural selection, should it occur, would be entirely barren of result; for the product of a highly mobile and a very passive cell should be a mean between the two, and thus revert to the ancestral condition of moderate amœboid activity. This, however, is not the case. We *know* that any organism which is itself the result of sexual union does not resemble a perfect mean between its two parents, but in sexual characters resembles one or other parent absolutely. The case of the fertilised ovum is like that of a piece of iron filing half-way between the positive and negative pole of a magnet. It is held by two equal and opposite forces, but at the slightest jar it flies to one or other pole. So the ovum, let it receive the *slightest* stimulus to develop one or other sex, becomes wholly male or wholly female.

Before proceeding further it is well to consider what is the common point of difference, if any, between the two sexes. Reviewing the animal and vegetable kingdoms as a whole, wherein especially does "maleness" differ from "femaleness"? The want of unanimity on this question may be gathered from the following extract from Geddes and Thomson's book on the evolution of sex, where we read that:—"The number of speculations as to the nature of sex has been well nigh doubled since Drelincourt in the last century brought together 262 'groundless hypotheses,' and since Blumenbach quaintly remarked that nothing was more certain than that Drelincourt's own theory formed the 263rd. Subsequent investigators

have, of course, long ago added Blumenbach's 'Bildungstrieb' to the list." These many hundred speculations it would be neither profitable nor, indeed, possible to discuss here.

One theory only—viz., that recently put forward by Professors Geddes and Thomson, will here engage our attention. They hold that as ova and sperm are the characteristic products of female and male organisms, it is reasonable to suppose that we have in them the most concentrated expression of the fundamental sex-difference: for the bodies, as Weismann has explained, are but appendages to the immortal chain of sex cells. Now, the ova of all animals are relatively large, quiescent cells, while the spermatozoa are, on the other hand, small, active, ciliated or flagellate. These properties are interpreted as indications of the balance of the cell-metabolism. Thus the large passive ovum represents a cell in which anabolism or assimilative changes preponderate. It absorbs nutrition, grows, and continually adds to its store of potential energy. The active sperm cell, on the other hand, is characterised as a prodigal, continually drawing upon its capital and converting its potential energy into kinetic. In the sperm *katabolism* preponderates. Their spendthrift nature is confirmed by their powerful attraction to highly nutritive fluids, while their persistent attraction to the well-nourished ova may be explained in the same way. These differences are, however, not confined to the sexual cells, but are supposed, in a diluted form, to pervade the organism; in proof of which are cited the more active habits, smaller size, and brighter colouring, which in general are associated with the male of any particular species. This theory, it will be noticed, is quite consistent with the description already given of a possible genesis of sex; but while admitting that this undue balance of metabolism may be the main characteristic difference between the sexes, we are inclined to consider that it is only in so far as predominant katabolism is expressed in motion, and extreme anabolism in quiescence and growth, that these properties have come to be inseparably connected with one or other sex. But, whatever be the difference between male and female, certain it is that in all higher organisms the fertilised ovum develops along certain lines, which, with a few rare exceptions, always lead

in one of two directions, so that the resulting organism becomes, in sexual characters at least, entirely like its male or entirely like its female parent.

What the conditions are which determine the sex of any given fertilised ovum is still a matter of great uncertainty, but as the question is so intimately connected with that which we have just considered, regarding the essential difference between the sexes, and as, unlike the latter, it has been the subject of experiments which have given to some extent satisfactory results, it will be convenient to consider it here.

For simplicity we may divide the theories on this subject into three classes, according as they consider the determination of sex to take place before, during, or after the union of sperm and ovum. Among the first class we have the hypothesis advanced by B. S. Schultze, of two different kinds of ova, which develop respectively into male and female. Again, one or other ovary in a woman has been stated to yield children of one sex only, the ova from the opposite ovary always developing the other sex. A similar quality has been attributed to the spermatozoa from the right and left testicles. The onus of proof lies with the supporters of such views as these, and until more evidence is advanced their discussion is out of place. Moreover, in some of the lower animals, at least, the sex of an individual may be determined or altered by circumstances occurring after the fertilisation of the ovum. Again, the respective ages of the parents has been thought to play an important *rôle* in the determination of sex, but statistics have been contradictory, and whatever the age of the parents, no very marked preponderance in either sex has been shown. The hypothesis which connects the sex of the offspring with that of the most vigorous parent is difficult of proof or disproof until some definite understanding is come to regarding the meaning of the term "comparative vigour." The same remark applies to those who hold "genital superiority" or "relative ardency" of one or other parent to be the main determining factor.

Darwin's theory that the production of either sex is due to a tendency "inherited like almost every other peculiarity, as, for instance, that of producing twins," gives us no clue as to the nature of the sex determinant.

In the second class of theories we have that of Canestrini, who believed sex to be determined by the number of sperms entering the ovum. Polyspermy has, however, been shown to be extremely rare, while the fact that, among bees, drones arise from unfertilised ova, while females result from the union of sperm and ovum, seems contradictory.

The time of fertilisation has been put forward by many as an important factor in sex determination. Thus Thury claims to determine the sex of cattle on the principle that an ovum fertilised soon after liberation tends to produce a female, while an ovum fertilised later tends to develop into a male. Girou has observed much the same phenomenon in plants. Düsing holds that young spermatozoa tend to transmit their male proclivities to the ovum which they fertilise, while older ones gradually lose this power. This theory is ingeniously applied to account for the stable balance in numbers of each sex produced. If males are rare, they will have more females to fertilise, and will, therefore, constantly empty their vesiculi seminales; the fresh sperms then used will produce an excess of male offspring until the balance of the sexes has been restored. Ingenious as this theory is, its application is limited; for the well-known monogamous habits of certain birds preclude its action, while among the human race in civilised communities, where the balance of sex numbers is known to be extremely accurate, it cannot be supposed to take effect.

In the third class we have the theories of those who hold that the sex of the embryo is determined by the conditions to which the ovum is exposed after fertilisation. Of these conditions nutrition and temperature take the foremost place. Thus Yung by adding to the nutrition of tadpoles raised the percentage of female frogs produced—on a beef diet from 54 to 78 per cent.; with fish from 61 to 81; and when the especially nutritious flesh of frogs was supplied 92 females were produced for every 8 males. In the same brood under normal circumstances the ratio was 56 females to 44 males. The case of bees is well known and none the less remarkable. The ordinary worker bee is a female whose reproductive organs have not been developed. The grub of any worker is capable of being reared into a queen or perfect female, if only it be supplied with a more sumptuous royal diet. The

drones appear to always arise from unfertilised ova. Von Siebold pointed out that in a certain species of wasp the percentage of females produced increased enormously from Spring to August and then diminished. The probable influencing factors in this case were both temperature and food supply.

The effect of different kinds of food in determining sex has been the subject of many experiments. Among such those of Professor Schenk, of Vienna, are some of the most startling, in ambition, at any rate, if not in result. Professor Schenk has propounded a method for producing male children at will, by submitting the mother to a specially regulated diet. He believes that the ovum is responsible for the sex, and that a well-nourished ovum is capable of developing into a male. Professor Schenk carefully examines the urine of pregnant women for minute traces of sugar, and if they are present predicts female offspring. The presence of carbohydrates in the urine shows, he believes, a comparatively defective metabolism, which causes a diminution in the nutrition and vigour of the ovum. In order to produce male offspring, he recommends strict attention to diet, with a view to eliminating the carbohydrate excretion. For this purpose nitrogenous and fatty food is the best. He attempts to support this theory by statistics, and mentions cases where women who had borne sons only, on becoming diabetic, subsequently produced only daughters. It is hard to reconcile this theory with any of the others where, in general, plentiful or nitrogenous food favours female production.

Düsing has observed that women with small placentas bear more boys—a fact which would point to the quantity rather than the quality of the food influencing the sex. In towns and prosperous families females are said to be produced in excess; in the country, and among the poor, males. If this is so, it is difficult to know whether to attribute it merely to better nutrition, or to nutrition of different sort, for in towns and among the rich the proportion of nitrogenous food consumed is much greater.

An experiment performed by Girou some time ago is interesting. He divided a flock of 300 sheep into two equal parts; one half were well fed, and served by two

young rams; the others were poorly fed, and served by two mature rams. The percentage of female offspring was in the first lot 60, in the second 40. Unfortunately we have here two factors—the difference of food and the age of the rams. Düsing has noticed that it is usually well favoured ewes which produce ewe lambs.

Cases of "true twins"—*i.e.*, of two organisms developing from the same ovum—are of interest. In the human species such "true twins" are invariably of the same sex. If twins are due to two sperms entering the ovum, this would go to prove that the spermatozoon was not a factor in sex determination. In cattle, however, the rule does not hold good. Spiegelberg and others have shown that in cattle twins may be of different sexes, or both true females; if both are males, one always exhibits the peculiar abnormality known as a "free-martin."

To sum up, the conclusions to be drawn from these observations and experiments are that females are produced in excess—(1) When the fertilised ovum is exposed to favourable conditions of temperature and amply supplied with food; (2) when the sperm fertilises an ovum which has just arrived at maturity. Bearing in mind the preponderant anabolism of the ovum, which reaches its maximum when the latter comes to maturity, we see that the egg then fertilised will commence its development with a plentiful store of nutriment. So these two conditions favouring female production may in reality be reduced to a single common factor, that of *favourable conditions of nutrition*. It is noteworthy, in this connection, that the spherical cell or ovum presents the smallest surface possible for its bulk, and is, therefore, suited to live only in a medium, with a copious food supply, while the sperm cell, presenting a comparatively large surface, is better fitted to absorb nutriment in less favourable circumstances, while its mobility may possibly enable it to escape surroundings where the assimilative material is insufficient. The formation of sperm and ovum, and consequently of male and female, may, therefore, conceivably have become associated with conditions of scanty or abundant food supply, respectively.

The difficulty in accepting nutrition, temperature, or any

similarly variable condition as the sex determinant, is to account for the extraordinarily constant balance in numbers of each sex produced. Some examples of this sex equilibrium may be taken from statistics in Darwin's "Descent of Man." In England, for 10 years (1857–66), among the human race, the proportion of males to females born was 104·0 to 100. Among race-horses the tabulated returns of births during 21 years showed a proportion of 99·7 males to 100 females. Among greyhounds the proportion during twelve years was 110·1 males to 100 females. Among sheep, of 97·9 males to 100 females. Cattle, 94·4 males to 100 females.

In all these instances, and in many more besides, the numbers of male and female offspring are approximately equal; and, although town and country or differences of climate have been shown to influence the ratio, yet in all these species, if we look only at broad averages, the numbers of the sexes are, roughly speaking, equal. It is difficult to explain this on a theory of nutrition or temperature, for we should then expect few individuals to produce offspring of both sexes, but, in general, to have female young only from the well-favoured, and males only from the ill-nourished, individuals. But this is not the case, for although in some families only one sex results, yet this condition is certainly the exception rather than the rule. Darwin, indeed, attempts to explain this by the *advantage* to a stock producing the sexes in equal numbers. Families with such a tendency survive in the struggle for existence, and this tendency is transmitted like any other. It is difficult to understand what is meant by the term "tendency," unless it be some unstable condition of the blood supply to the genital organs. But it would be flying in the face of facts to deny the effect of nutrition and temperature, to some extent at least; so that if we admit Darwin's theory we must suppose that such families alone have survived, which possess instability in regard to sex production *in the climate and circumstances to which they are accustomed;* we should then expect that when a *change* of these conditions occurs, as, *e.g.*, when animals are sent to a foreign country, or when they come to a richer or poorer pasture, that the balance in sex production would be destroyed, and one or other sex would be produced in excess. Statistics of the offspring

of the *nouveaux riches* should show a large majority of daughters! We conclude, then, that although in certain cases some conditions are known to influence the sex produced, yet in no case are all the determining causes known, while in many no factor in sex determination is certainly known.

So far we have not considered the difference between the sexes, excepting as it is evidenced by the production of male or female generative cells. But among the higher animals there are many other sex characters besides. They have been variously classified into primary, secondary, and tertiary sex characters. The most usual method is to call all characters directly connected with the essential functions of the sexes primary, all others being designated as secondary. This classification is somewhat unsatisfactory, since all the differences in the reproductive organs of the sexes are themselves secondary to the production of ova or spermatozoa. Again, it is difficult to know in which class to put the development of the breasts in women, since suckling scarcely ranks with gestation as an "essential function" of the sex, while, on the other hand, it would be absurd to consider the breasts as a sex characteristic in the same category as, *e.g.*, the duller plumage of the hens in some species of birds. Now all these sex characteristics, excepting only that of ova and sperm production, with which we have already dealt to some extent, must be interpreted according to the general laws of evolution and development; but that is not all; in endeavouring to explain sexual dimorphism we have to account for the fact that these characters are acquired by and developed in one or other sex only.

We have now to consider what is known regarding this association of characters. Two distinct elements are included in the term inheritance, viz.—(1) the transmission, and (2) the development, of characters. Now, as Darwin points out, secondary sexual characters (by which he means those not directly connected with the act of reproduction) are *transmitted through both sexes, though developed in one alone*. "This fact is demonstrated when two species having strongly marked sexual characters are crossed, for each transmits the characters proper to its own male and female sex to the hybrid offspring of either sex." It would seem then that wherever

sexual dimorphism appears the embryo is possessed of two sets of characters, and that according as conditions determine its sex one set is developed, while the other remains latent. Further light is thrown on the subject by studying the effects of castration of males. After this operation secondary sexual characters, which have not yet made their appearance, do not develop. It is well known that if a boy be castrated the voice does not deepen, the hair does not grow on the face, and the general character of the body remains more like that of a child or woman than of a man. Unfortunately there are many sexual characters already acquired before it is possible to perform the operation, and it remains problematical whether such characters—*e.g.*, the skeletal differences in men and women—would be altered by sufficiently early removal of the regenerative tissue. Operation, however, is not the only means by which the removal is effected. Parasitic infection often brings about a similar result, and is peculiarly interesting in so far as it occurs long before operation would be possible, and, therefore, when the sexual characters are less determined. Individuals of one or other sex so affected approach to a "mean form" between male and female. Le Dantec mentions that among crustaceans, where the periodic casting of the shell causes a skeletal change of form even in the adult, well-developed males after removal of the sexual tissue gradually come to have an "absolutely female body." Giard writes of stenorrhynchus, a crab with well-marked sexual differences: "A description of these males castrated by the parasite is absolutely useless. It would be confounded with the classical figures given of the female." We should note, too, that in youth and old age, before the sexual elements are mature and after their disappearance, the two sexes resemble each other more closely than during adult life.

From these observations we are entitled to conclude that there is no sex in the somatic cells, and that sexual dimorphism is associated with, and dependent on, the influence of the reproductive cells. But, granting this, what is the relation between the reproductive sex cells and these so-called secondary sexual characters? Darwin believed them to be mainly due to an influence which he called "sexual selection." Broadly speaking, the advocates of this theory hold that certain varia-

tions are perpetuated, solely in virtue of their benefiting the individual in effecting sexual union. Animals which possess such variations leave more numerous offspring; moreover, in consequence of their having greater choice in mating than their fellows, they tend to produce a more vigorous stock. Thus the larger and more powerful male salmon alone secures the desired female. The more elegant cock pheasant will secure the well-favoured hen. So the stock of the strongest male salmon and the brightest cock pheasants will be best fitted to survive. It would be quite impossible here to enter into the pros and cons of this most ingenious and interesting theory. We shall, however, briefly state two other views. Some deny sexual selection; in the case of birds they believe it requires an impossible degree of æsthetic development on the part of the hen to prefer the more gorgeous male bird for a mate. They hold that "natural selection" acts differently on the two sexes, and is alone responsible for the dimorphism. Thus, if a hen pheasant were to resemble in plumage her bright-coloured mate she would be too conspicuous during the nesting season to her natural enemies, who would make short work of her and her young. Thus dimorphism would arise from the duller coloured hens alone surviving.

The third theory, however, requires no selective action. To Professors Geddes and Thomson the brilliant plumage of the cock pheasant is but the outward expression of the maleness of the bird. His show of colour is but an index of the energy connected with his sex, or as they put it, of his preponderant katabolism. Poetical as this theory is, it cannot be said to be as definite as either of the others. The expression of katabolism in brilliant colours, though appealing strongly to the imagination, can as yet not be scientifically explained. This theory accounts elegantly for the effects of castration on males. Its supporters point to the different habits characteristic of the mutilated male. With the absence of his generative tissue the male loses his characteristic energy, and in habit as well as form comes to resemble the female.

The theories which postulate a selective action also admit some association between the secondary characters and the sex tissue, but they deny that the association is necessarily that of cause and effect. We have already seen that each

individual inherits the characters of both male and female of its species, and that according as male or female generative cells come to be formed within it—that is, as it becomes a male or female—the one set develops, the other lies latent. It is noticeable that these theories are by no means mutually exclusive. They may all be true. It is quite logical to conceive of certain characters, such as bright plumage, having originated as an expression of excessive katabolism in the male, and of the dimorphism being intensified by both "natural" and "sexual" selections. And now, having considered what sex is, how it originated, and how it is determined in the embryo, we come to consider the bearing of sex upon evolution in general. The importance of this question is obvious when we remember that all the higher plants and animals are regenerated in this manner.

What has been the advantage or disadvantage of the sexual method in the evolution of higher forms? The whole plan of evolution may broadly be said to be based on two laws—(1) that like tends to produce like; (2) that in every stock certain small variations constantly make their appearance, and, by virtue of the first law, tend to be perpetuated. Different authorities have interpreted the effect of the sexual method of reproduction on the working of these two laws in diametrically opposite ways; thus, many hold that the chief effect of the union of two individuals is to modify in the offspring the individual peculiarities of either parent, and thus maintain the identity of the species. For them sexual union corrects idiosyncrasies. Others again, chief among whom is Weismann, hold diametrically opposite views. They believe that it is by sexual union and the new *combination* of hereditary qualities thus acquired that any variation arises in the stock. Sex is for them the cause of variation, and consequently of the formation of new species. A third party hold that the first law is upheld by the female cell, which preserves for its offspring the essential characteristics of the race, while the minor differences are due to the male. For, as Brooks states, "the males are as a rule more variable than the females; the male leads and the female follows in the evolution of new races." Darwin certainly believed males to be as a rule more highly evolved

than females. He looked on man as a step nearer a new species than woman. Women are more like children than men are, and on the principle that the history of the individual is the history of the race, the young child is more like its remote, and consequently less evolved, ancestors than the adult man is. Spencer, too, held similar opinions, but from a different point of view. He believed woman's development to be early arrested for procreative purposes. Thus Darwin's man is an evolved woman, Spencer's woman an undeveloped man.

The diversity of opinion upon this point, as well as upon many others already mentioned, shows how very little is really known as to the import as well as the nature and origin of sex. Nature has, however, not been altogether silent, but has given some replies to the questionings of science, and even though these answers are few, and often indefinite, yet they serve as finger-posts towards the solution of more complex problems. Whether the mysteries of sex will ever be completely solved is beyond our present ken, but every step in that direction advances our knowledge of nature's method of producing by far the greatest number of the living forms which interest the biologist. Moreover, when we consider that each one of us is possessed of that mysterious quality "sex," with all its attributes and characteristics, the question assumes a wider range, and concerns not only the biologist, but every thinking member of the human race.

THE OPERATIVE TREATMENT OF DEVIATED SEPTUM.

IN the number of the *Laryngoscope* for March, 1902, Dr. Chevalier Jackson, of Pittsburg, in speaking of the failure of many operations for the cure of deviated septum, gives as his reason that no account is taken of the pressure exerted by the large inferior turbinal of the originally concave side, which, by day, when contracted looks harmless, but when the head is on the pillow swells rapidly up and exerts a steady pressure which pushes the septum back into its deformed position. This he illustrates by a series of diagrams. He advises the resection of the offending turbinal previous to the septal operation.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

The Thompson Yates Laboratories Report. Edited by RUPERT BOYCE and C. E. SHERRINGTON. Vol. IV. Part II. 1902. Longmans, Green & Co. Pp. 350.

WE do not know any more striking example of the value of laboratories, and of the good return that may be expected from the establishment of such institutions than that which is furnished by these admirable reports. Since the opening of the superb laboratories for physiology and pathology, which Liverpool owes to the munificence of Mr. Thompson Yates, four volumes have been published, full of matter of the highest scientific interest and practical importance, and no better example of these qualities can be found than is contained in the number now before us.

The papers in this part are fourteen in number.

The first is a long and painstaking work, by J. S. Macdonald, on the Injury Current of Nerve—the Key to its Physical Structure. The work is both critical and experimental, and the author arrives at conclusions which differ very materially from those previously held. It would lead us entirely too far to attempt to give a detailed analysis of this really very remarkable paper, but it is one which, while appealing mainly to professional physiologists, cannot fail to receive from them the recognition it deserves, whether the views put forward turn out to be just or not.

The second paper is a short, preliminary account of Observations on the Physiology of the Cerebral Cortex of some of the Higher Apes, by Dr. Grünbaum and Professor Sherrington. The experiments were made on orangs, gorillas, and chimpanzees. The excitation used was unipolar faradisation, which allows very fine localisation. It was found that the so-called motor area included continuously the whole length of the precentral convolution, and also entered the whole

length of the sulcus centralis, with the exception of its extreme upper and lower tips, but in none of the animals did the area extend behind this sulcus. On the mesial surface of the hemisphere the area did not reach the calloso-marginal fissure. The excitable area extended not only to the bottom of the sulcus centralis, but also into other fissures, so that the "hidden part probably equals, perhaps exceeds, in extent that contributing to the free surface of the hemisphere." The arrangement of the representation of the musculature of the different regions is well shown in a drawing. One of the most interesting conclusions of this important work is that "the sulci in the region of cortex dealt with can in no sense be considered to signify physiological boundaries." Even the limitation of the excitable area in front of the sulcus centralis does not disprove this conclusion, since the antero-posterior diameter of the sulcus represents an area of 25 millimetres across.

H. E. Annett contributes an experimental inquiry on tubercular expectoration in public thoroughfares. He has collected 105 sputa from the Liverpool streets, and tested them microscopically and by inoculation. It was found that 4·75 per cent. contained virulent bacilli. This may seem a small number, but when the number of sputa lying on the pathways of even a small part of the town were counted the actual number of foci of infection was shown to be very large. Valuable suggestions are given as to how this nuisance may be abated.

Professor Boyce records his examination of a case of pseudo-actinomycosis in the udder of a cow, in which the appearances of the ray fungus were simulated by crystalline bodies, probably of the nature of tyrosin.

An account of an isolated case of plague occurring in Liverpool, and presenting some remarkable features, is given by Dr. A. S. Griffith.

A very interesting paper by Dr. E. H. Hume, on a new pathogenic bacillus isolated from a case diagnosticated as typhoid fever, is a valuable contribution to our knowledge of the pathogenesis of the latter disease. That other organisms than the *B. typhosus* can cause fever resembling clinically those of typhoid, but in which the serum reaction is negative,

is made probable by several cases which have been published. The case here recorded is another example. In all these cases the disease has been shown to be caused by organisms intermediate between *B. typhosus* and *B. coli*, which agree in having the power of fermenting glucose, but not lactose, and in not clotting milk, and which resemble one another so closely that they may be classified together in a group—the *B. enteritidis*.

A note by Professor Boyce on fungus deposits occurring in the water mains, conveying the unfiltered water to the Liverpool reservoirs, and a paper by E. N. Coutts on sulphide-producing organisms follow.

W. G. Little describes a new and convenient apparatus for the estimation of urea by the hypobromite method. E. E. Glynn records a case of extensive focal necrosis of the liver in an early case of typhoid fever, and discusses the causation and consequences of this condition.

Mr. J. E. Dutton describes a case in which a trypanosome was found in the blood of a man who had contracted the infection on the Gambia river. This is only the second case in which this kind of parasite has been found in the human subject. From the description it would appear to be a new species, which the author proposes to call *Trypanosoma Gambiense*.

Dr. Looss, of Cairo, has recently shown that the embryos of *Ankylostoma* may penetrate the skin, and thinks that this is the path by which infection by this parasite is effected. A similar observation has been made by Dr. Bentley in Assam, and has been published this year. Dr. Paul van Durme now publishes observations showing the possibility of a similar cutaneous infection by another intestinal parasite, *Anguillula intestinalis*. Although the penetration of the skin by the larvæ is shown, the passage of the worms into the intestine is yet to be proved.

The Report of the Yellow Fever Expedition to Parà of the Liverpool School of Tropical Medicine and Medical Parasitology, by H. E. Durham, is a valuable contribution to our knowledge not only of yellow fever itself, but of the general sanitary, or insanitary, condition of the country at the mouth of the Amazon. This report has a tragical interest, since both the

members of the expedition were attacked by yellow fever, and one of them, Dr. Walter Meyers, died.

The principal conclusions reached by the work of this expedition have been already published, and a summary of them is given in Dr. Durham's article in the last edition of Quain's Dictionary of Medicine. The discussion of the bacteriology of yellow fever, and of the importance of mosquitos, particularly of *Stegomyia fasciata*, in spreading the disease has received universal recognition.

Among the "odd notes" appended to this report is one on a disorder well known to dwellers in the tropics, and which, although not so deadly as yellow fever, is the cause of intense discomfort. This is prickly heat. It is shown that it is an infectious disease, spreading by contact, that it is associated with the presence of active amœboid bodies, and that it is curable by the application of corrosive sublimate, iodine, and other protoplasmic poisons.

Handbuch der physikalischen Therapie. Herausgegeben von Dr. A. Goldscheider und Dr. Paul Jacob. Theil II.; Band II. Leipzig: Thieme. 1902. Ss. 661.

In this, the concluding part of this great work, the same high standard of excellence that we noticed in the previous volumes is fully maintained. In it are described the methods of physical treatment suitable for the special diseases which were not noticed in the first part of the second volume.

The following are the diseases dealt with, and the names of the different writers:—Diseases of the circulatory organs are treated of in four chapters—viz., Valvular Diseases of the Heart, by Professor M. Litten and Dr. Rudolf Lennhoff; Muscular Failure of the Heart, by Dr. Julius Lazarus; Diseases of the Pericardium, also by Dr. Lazarus; and Diseases of the Vessels, by Professor Litten.

Professor Senator writes on Diseases of the Kidneys, and Professor Posner on those of the Urinary Passages, including gonorrhœa and hypertrophy of the prostate.

The physical treatment applicable to diseases of the male sexual organs is described by Professor Fürbringer, while that suitable in gynæcology and midwifery finds an able

exponent in Dr. Sigmund Gottschalk. To this, Professor H. Kisch adds a short appendix on Abnormalities of the Menopause.

The chapter on the diseases of the intestinal tract includes five chapters—Diseases of the Œsophagus, by Professor Reigel; Diseases of the Stomach, by the same writer; Diseases of the Intestine and Peritoneum, by Professor von Jaksch; Enteroptosis, including Movable Kidney, Movable Liver, and Movable Spleen, by Professor Einhorn; and Abdominal Tumours, also by Professor Einhorn.

The chapters on diseases of the liver, and on diseases of the spleen, are by Dr. H. Strauss.

The concluding chapter on the physical treatment of diseases of the peripheral and central nervous systems is naturally of great length, and is divided into six main divisions, each of which is further sub-divided. The main divisions are Neuritis and Peripheral Paralysis, by Professor Goldscheider; Spasms (Krämpfe), by Dr. L. v. Frankl-Hochwart; Neuralgia, by the same author; Spinal Diseases, by Dr. Paul Jacob; Diseases of the Brain, by Professor Jolly; with an appendix on Aphasia, by Professor Goldscheider; and Neuroses, by Drs. Determann, Strasser, Hoffa, and Laquer.

We have frequently expressed our recognition of the great value of this work, which it is not too much to speak of as monumental. It cannot fail to bring forcibly home to the minds of medical men the enormous capabilities of physical methods in the treatment of most diseases, and to show how the treatment by drugs may be assisted, or in many cases superseded, by the methods so fully described in its pages.

In their preface the editors dedicate their work to Professor Leyden on his 70th birthday, and gracefully point out how much physical therapeutics owe to the advocacy and discernment of this distinguished physician.

In conclusion, we would offer our sincere congratulations to all those whose united labour has endowed medical literature with this important addition. There is only one fault we have to find—namely, the want of an index—a serious want in a book such as this, which, from its size, must be mainly a work of reference.

Protoplasm: its Origin, Varieties, and Functions. By JOHN W. HAYWARD, M.D. Bristol: John Wright & Co. 1902. Pp. 51.

IN this essay, which is founded on a paper read before the Literary and Scientific Society of Birkenhead, the author goes to the bottom of things, and discusses such subjects as the origin and constitution of matter, the origin and nature of life, consciousness, memory, the will, and other mental phenomena, the soul, and so on. He is evidently very well satisfied with his own solutions of all these recondite questions, and reiterates the statement that "the fact that motion is innate in the atoms of primitive matter removes the chief difficulty of science, clears up the mystery, and solves the riddle of the universe." The whole paper is highly speculative, and so far as our judgment goes does not bring the solution of the riddle of the universe any nearer than it was before.

It would be impossible for us within our space to give any analysis of the writer's views, but anyone who wishes to become better acquainted with them can do so for the modest sum of eighteen pence.

Catechism Series: Bacteriology. Edinburgh: E. & S. Livingstone. 1902. 8vo. Pp. 96.

THIS is the latest of a long series of small, paper-bound books, which are very popular among medical students, and, perhaps, with some reason. They are written anonymously, which is to be regretted. In the form of question and answer information is given in a succinct way, and we have not much fault to find with the information so given. Evidences of careless reading for the press are forthcoming here and there in the booklet before us. For example, "Fränkel," or "Fraenkel" (whichever you will), is repeatedly spelled "Frankel." "Dessication" hurts the eye of both body and mind. The illustrations are, for the most part, reproduced from Green's "Pathology."

On the very first page a micro-millimetre is denoted by 1m. This is quite wrong; the symbol for a micro-millimetre is the Greek μ—a sign everywhere adopted.

Taking it all in all, however, the present number of the "Catechism Series" does not leave much room for hostile criticism.

Text-Book of Anatomy. Edited by D. J. CUNNINGHAM, F.R.S., M.D. (Edin. et Dubl.); D.Sc., LL.D. (Glasg. et St. And.); D.C.L. (Oxon.); Professor of Anatomy and Chirurgery, Trinity College, Dublin. Illustrated with 824 Wood Engravings from Original Drawings, many printed in colours. Edinburgh and London: Young J. Pentland. 1902. Royal 8vo. Pp. xxxii + 1310.

To the illustrious Professor of Anatomy in the University of Edinburgh the publication of this fine "Anatomy" must bring unfeigned pleasure. The fruits of his teaching and the far-reaching influence which his consummate skill as an anatomist enabled him to wield are evident in every page of the great work which the authors—most of them his past pupils—have dedicated to him in these graceful terms—"To Sir William Turner, K.C.B., F.R.S., M.B., LL.D., D.C.L., D.Sc., in recognition of his eminence as an anatomist and his influence as a teacher, this volume is dedicated by those of his former Pupils and Assistants who have contributed to its pages." The contributors are ten in number, and with one exception they have all studied under Sir William Turner, while all but two have for longer or shorter periods acted as his assistants. "Bound together by this common tie, and animated by affection and reverence for their great master, they have sought to produce a book worthy of him whose teaching it so largely reflects, and if this object has not been attained it is not for want of will, but of power, on the part of the writers."

It is obvious that to criticise in detail a work of this size—it runs to some thirteen hundred pages of royal octavo—would be impossible within a limited space. We must, therefore, content ourselves with giving our readers a fair idea of the plan and scope of the work, pointing out some of its salient and distinctive features.

And first as to the *personnel* of the authors. Associated with the editor, Dr. D. J. Cunningham, the distinguished

Professor of Anatomy and Chirurgery in the School of Physic in Ireland, were nine contributors, all of whom (with one exception) occupy a foremost position as anatomical teachers. Taking the names in alphabetical order we find that Dr. Ambrose Birmingham, Professor of Anatomy in the Catholic University School of Medicine, Dublin, writes on the digestive system; the Editor, on the brain and spinal cord, the respiratory system, and the ductless glands. Dr. A. Francis Dixon, Professor of Anatomy in University College, Cardiff, but well remembered in Dublin as a distinguished graduate of our own great University, contributes an article on the urogenital system. Dr. David Hepburn, Lecturer on Regional Anatomy in the University of Edinburgh, describes the articulations or joints under the heading "arthrology." Mr. Robert Howden, M.A., M.B., Professor of Anatomy in the University of Durham, deals with the organs of sense and the integument. To Dr. A. M. Paterson, Professor of Anatomy in University College, Liverpool, were entrusted the subjects of myology, the spinal and cranial nerves, and the sympathetic nervous system. Dr. Arthur Robinson, Professor of Anatomy in King's College, London, in conjunction with Professor Young, of Owens College, treats of general embryology, as well as of the vascular system. Mr. Harold J. Stiles, M.B., F.R.C.S., Ed., Surgeon to the Royal Hospital for Sick Children, Edinburgh, who alone among the authors is not a Professor of, or Lecturer on, Anatomy, discusses surface and surgical anatomy. Mr. Arthur Thomson, M.A., M.B., Professor of Human Anatomy in the University of Oxford, contributes the article on "Osteology." Mr. A. H. Young, M.B., F.R.C.S., Professor of Anatomy in the Owens College, Manchester, writes the articles on "General Embryology" and "The Vascular System" jointly with Professor Robinson. The index is the work of Dr. T. W. P. Lawrence, of University College, London. It is very full, occupying no fewer than 72 royal octavo pages.

The next point which calls for remark is the arrangement of the matter. The work opens with a brief introduction, in which various technical terms are defined. Among these there is a leaning towards the adoption of the terms "ventral"

and "dorsal," instead of "anterior" and "posterior," on the ground that the latter are applicable only to man, who stands erect, and not to animals in the prone or quadrupedal position. It is, however, admitted that the terms "anterior" and "posterior" have "become so deeply ingrained into the descriptive language of the human anatomist that it would hardly be advisable at the present moment to adopt this course." Similarly, the terms "cephalic" and "preaxial" are frequently used in place of "superior," and "caudal" and "postaxial" in place of "inferior."

The subject-matter which follows the introduction is considered under the headings, General Embryology, Osteology, Articulations or Joints, Muscular System, Nervous System, Organs of Sense and the Integument, Vascular System, Respiratory System, Digestive System, Urogenital System, Ductless Glands, Surface and Surgical Anatomy.

The section on embryology is a splendid piece of scientific writing. It is profusely illustrated by fifty-three drawings, many of which are coloured, and all of which are admirably simple in execution, and clear. They are the work of the authors themselves—Professors Young and Robinson. In fact the illustrations are a conspicuous feature throughout this text-book. They are all new in the sense that in no case has an old drawing or an old block been used. But, further, the vast majority of the many illustrations in the work are new in the sense that they are original. The drawings for each section were prepared under the personal supervision of its author, and, with the exception mentioned above, and as regards also the chapter on osteology, they are the work of Mr. J. T. Murray, to whom the Editor expresses his acknowledgments in graceful terms. The chapter on osteology has been illustrated by Mr. W. C. Stevens, and the microscopical drawings in the section on the brain and spinal cord were executed by Mr. Wm. Cathie. Coloured outlines representing the attachments of the muscles on the figures of the bones were mapped in by Professor A. M. Paterson, of University College, Liverpool.

In the section on osteology great attention is paid to ossification. The drawings illustrating the process are coloured differentially—the primary centres being tinted pink, and the

epiphysary centres and epiphysial plates blue. Thus, the eye is appealed to, and it becomes extremely easy to understand the letterpress description.

In Professor Paterson's monograph on myology the illustrations of transverse sections at different levels, both of the trunk and limbs, are a striking characteristic. These transverse sections, to our mind, possess a very high educational value. They impress on the memory the anatomical relations of the muscles, and they show in a very simple way the use of the fasciæ and ligamentous structures connected therewith.

From the Editor's pen comes a splendid monograph on the nervous system, so far as the brain and spinal cord, with their meninges, are concerned, which occupies 151 royal octavo pages. In addition to many original drawings, we notice several illustrations after Retzius, His, and Flechsig. Some drawings taken from casts are also a novel feature in this part of the work, in which both minute anatomy and embryology receive due attention.

Two other articles complete the description of the nervous system. The first of these is by Professor Paterson on the Spinal Nerves, the Cranial Nerves and the Sympathetic Nervous System. The second is on the Organs of Sense and the Integument, by Professor Robert Howden, of Durham. Nothing can exceed the beauty and delicacy of the illustrations in the latter section. They will prove of inestimable value in teaching the minute anatomy of the eye and ear, as well as of the nose and skin. The "Vascular System" is the joint work of Professors Young and Robinson, who have spared no pains to make this article worthy of their own high reputation. Advanced students (among whom we class ourselves and other practitioners, who are not content to stand still in their pursuit after knowledge) will read with interest the sections on the development of the blood, vascular system, the morphology of the vascular system, and abnormalities or variations of the vascular system—heart, arteries, veins, and lymphatics.

In the chapters on the respiratory and digestive systems full use has been made of the results obtained from the employment of formalin as a hardening and preserving reagent.

The authors have taken full advantage of the new method, and so secured a more accurate topography of the viscera than was hitherto possible. The Editor describes the organs of voice and respiration. Dr. Ambrose Birmingham describes the digestive system under the following heads:—The alimentary canal or digestive tube, the digestive glands, and the "accessory parts"—namely, the teeth, tongue, gums, palate, and tonsils. In this article and also in that on the urogenital system, by Professor A. Francis Dixon, there is an unusual repetition of illustrations, presumably for convenience of reference, but it partakes rather of the nature of bookmaking. Thus, Fig. 639, on page 951, reappears as Fig. 661 on page 981; Fig. 640 (page 952) is the same as Fig. 664 (page 985); Fig. 641 (page 953) is Fig. 660 (page 980); Fig. 646 (page 959) is Fig. 664 (page 985), and Fig. 638 (page 949) reappears as Fig. 663 (page 984). Figs. 703 and 708 are identical.

Dr. Birmingham has largely availed himself of the formalin method of injections, in the practical application of which he is a past master. It was probably the employment of this procedure, together with injections of the emptied stomach cavity with gelatine, which led him to recognise and name the "stomach chamber," figured and described at page 1003, as well as its floor or "stomach bed." Professor Birmingham's description of the minute structure of the intestinal walls is splendidly simple, yet eminently scientific.

Professor Dixon's article on the urogenital system is one of the ablest in the whole book. On the threshold it is slightly marred by a slip (page 1079) in the use of the word "hilus" (which does not exist) for "hilum." The same error occurs in Professor Cunningham's account of the spleen (page 1151).

The last chapter in this fine work is a most useful description of surface and surgical anatomy, by Mr. Harold J. Stiles, Surgeon to the Royal Hospital for Sick Children, Edinburgh. It will prove of great value to physicians as well as to surgeons, for the author deals with the topography of the thoracic and abdominal viscera in such a way as to aid physical examination apart from any question of operation.

In concluding this notice we feel a natural pride in reflecting that, while the spirit of the great Edinburgh School of

Medicine breathes through the pages of the work, yet Irish teachers and Irish anatomists have borne no unworthy or insignificant part in the production of what may fitly be called the "Twentieth Century Text-Book of Anatomy."

Morphinism and Narcomaniacs from other Drugs; their Etiology, Treatment, and Medico-Legal Relations. By T. D. CROTHERS, M.D.; Superintendent of Walnut Lodge Hospital, Hartford, Conn.; Editor of the *Journal of Inebriety*; Professor of Mental and Nervous Diseases, New York School of Clinical Medicine. Philadelphia and London: W. B. Saunders & Company. 1902.

DRUG habits are so rapidly becoming widespread, and are assuming such an importance in the life of nations, that they are calling forth an extensive literature of their own.

The latest, on Morphinism and Narcomaniacs from other Drugs, from the pen of Dr. Crothers, is a very important addition to the list. He writes from an extensive experience, both practical and based on the writings of others.

We think the matter might have been more condensed without omitting any essential details, and with the result of making the writer's meaning clearer. The style is somewhat obscure, and, as with many other modern writers, we miss the clear, forcible word-painting of earlier writers, such as Graves and Stokes in Medicine, Pott and Brodie in Surgery. For example, we select two short consecutive paragraphs (pp. 213–214):—

"A number of persons from curiosity have become opium-smokers. Finding the effects of opium in this way fascinating, smoking has been continued secretly. An example was brought out in a disputed will of a man who had for twenty years used opium in this way. In early life he went to an opium resort from curiosity, and ever after was a victim."

"In the treatment, the same seclusion, watchfulness, and medical and hygienic care are essential. There is present a marasmic condition which requires special means and measures suited to each case."

The first leaves much to be understood; the second is difficult to understand at all. To what does "the same"

refer? We are told neither what the "marasmic condition" is, nor any of the "special means and measures" that are suitable.

It is to be regretted that, with the writer's large experience, the chapter on treatment is not fuller and more explicit. In this country, fortunately, the number of drug narcomaniacs is not by any means as large as in America, and the opportunity for gaining experience in their treatment is consequently very limited. Treatment, however, is given in such a vague and general manner that it will be of little value to any inexperienced asylum manager who may have a patient placed under his care.

"After the morphin is withdrawn the severity of the irritation and delirium is sometimes best relieved after the second day by return to the drug again in some concealed form for one or two doses." From many such sentences the uninitiated will infer various "withdrawal symptoms;" but they are nowhere succinctly and definitely stated, nor are the commoner sudden and dangerous complications clearly defined. The reader also gains no information from the writer's experience of the best way of giving drugs in "some concealed form," nor of other small matters which may mark the success or failure of treatment.

The chapter on the medico-legal aspects of narcomaniacs is important and interesting. Too little attention has been devoted to this branch of the subject by recent writers and specialists. Dr. Crothers' opinions and experience are therefore well worthy of study. It is a pity, however, that in the many illustrative cases he gives, there are very few in which the legal result appears. For instance—"A physician killed a relative without reason or provocation, and claimed to have no recollection of the act. He was a morphinist, and had somnolent periods resembling trance states. During this condition the crime was committed." But we are not told what view the court took; without this information the cases may be regarded as so many anecdotes.

Concerning drug habits other than those of opium and morphin, the cocaïn habit is dealt with most fully. Prominence is given to its rapidly-increasing growth and its powerfully demoralising effects.

On this side of the Atlantic we are, perhaps, old-fashioned in our frequent reference to authorities for important observations; this is not a general failing with our friends across the water, and we find few in this work. Magnan first drew attention to an important sign which Rybakoff says is pathognomonic of cocaïn inebriety, as he has never found it in any other drug habit nor in any other form of inebriety. It is an hallucination of feeling which the patient describes as if foreign bodies, grains of sand or microbes, were moving in or beneath the skin. Of this Dr. Crothers says (p. 282)—"The feeling of bugs crawling over the skin comes in the later stages, and is a very significant symptom." We are aware that some Americans speak of insects, and such like, as "bugs;" but with us bugs are bugs, and we congratulate ourselves that we have not experienced the sensation of their crawling.

Tea, coffee, tobacco, are each treated as inebrieties, and given considerable space, though alcohol is not considered at all. We would have preferred more consideration given to such drugs as antipyrin, sulphonal, paraldehyd, trional, which are rapidly taking their place as dangerous "habit" makers, but of which as yet little has been written or collected from scattered observations, through which the secret users of such may be detected from the symptoms they present, also what special dangers and effects are peculiar to each.

The book (of 344 pages) is nicely got up, well and clearly printed on good, light paper. We commend it to all who are in any way interested in the subject of drug habits.

Clinical Lectures on Hydatid Disease of the Lungs. By ALFRED AUSTIN LENDON, M.D. (Lond.); Lecturer on Obstetrics, and Clinical Lecturer on Diseases of Children; formerly Lecturer on Forensic Medicine in the University of Adelaide; Visiting Medical Officer, Adelaide Children's Hospital. London: Baillière, Tindall & Cox. 1902. 8vo. Pp. 122.

THE Clinical Lectures embodied in this volume were delivered to the students who were attending the Adelaide Children's Hospital in 1897. It would appear that Hydatid Disease is exceptionally rife in Australia. Hence physicians practising

in that vast country enjoy unrivalled opportunities of studying the subject, on which Dr. Dougan Bird, of Melbourne, the late Dr. Davies Thomas, of Adelaide, and now Dr. A. A. Lendon, of the same city, have written excellent monographs.

In the present work the author includes under the term "Hydatid Disease of the Lungs" all such cases as are liable to rupture into the lungs or pleural cavities, although they may be primarily situate in the abdominal viscera, and, in addition, all such cases as may require an operation through the chest wall.

The "Introduction" closes with a scheme of the various stages through which a pulmonary hydatid cyst may pass. The unruptured cyst may present no symptoms, or symptoms which are indecisive. This is the first or "latent" stage. Next, the stage of "suspicion" is denoted by marked physical signs. In it the cyst may die, or grow to an enormous size, and cause the death of the patient, or it may rupture. This accident constitutes the third stage, in which "rupture" and the expulsion of the contents of the cyst may cause death "by drowning" (the torrent of escaping fluid being drawn during inspiration into the bronchial tubes on the sound side of the chest). Or the fourth stage—that of "quiescence"—may result, the cyst becoming obsolescent. The fifth stage is that of "expectoration" of the mother cyst. In it the patient may die of impaction of a fragment of hydatid membrane in the glottis; or he may succumb to hæmorrhage; or he may recover with a "potential cavity" in the affected lung. At page 89 the author explains this term. He writes: "I say potential cavity because the pressure exerted by the air in the pleura, plus the contractility of the lung, would cause the cavity to be contracted to the diminished size of its contents." Dr. Lendon is speaking, of course, of pneumothorax.

The sixth stage is that of "sepsis," in which suppuration of the sac takes place from bacterial infection. In this condition the patient may sink from exhaustion or may recover. The seventh and last stage is that of the "empty sac"—an empty cavity being left in the lung after expulsion of the hydatid membrane.

Clinical illustrations of these various stages occupy the greater part of Dr. Lendon's monograph. The series of cases

he adduces are most interesting and instructive, and undoubtedly add immensely to our knowledge of hydatid disease as it affects the lungs.

The complications of pulmonary hydatids are described in Part VI. of the work. Those considered are—bronchitis, pneumonia, pleurisy, pneumothorax, phthisis, and gangrene. This last is discussed at page 91, with the following few words of scepticism :—" I have a suspicion that the so-called gangrene following hydatid disease is merely an error based upon the presence of fœtor in the sputum."

Subsequent chapters, or " Parts," are devoted to cysts in the pleural cavity and to the invasion of the thorax by cysts of abdominal origin. Dr. Lendon is at some pains to establish the differential diagnosis of pleural and intrapulmonary hydatid cysts. Dr. Dougan Bird, many years ago, believed that in the case of a pleural cyst the usual rounded area of dulness in some degree altered with change of position. To this, which Dr. Bird designated " the only special physical sign of pleural hydatid," Dr. Lendon attaches but little importance. He relies much more on the presence of a marked hydatid fremitus and on local bulging between the ribs. During the performance of an operation for hydatid cyst also, Dr. Lendon places great reliance on the presence or absence of any evidence of communication between the cavity in which a hydatid cyst lies and the bronchia as a diagnostic sign.

The closing chapters of this excellent book give a good account of the anatomy, pathology, and ætiology of hydatid cysts in the lungs, and of the prophylaxis of the affection.

The work is well illustrated and clearly printed. We commend it to our readers as a valuable memoir on an important medical and surgical subject.

Gonorrhœal Arthritis ; its Pathology, Symptoms, and Treatment. By L. VERNON JONES, M.D. London : H. K. Lewis. 1901. Cr. 8vo. Pp. x + 52.

THE author's short preface to this pamphlet is as follows :— " My apology for this little book is the absence of any work upon the subject, and my consequent difficulty some years ago in obtaining any reliable information, except of a frag-

mentary nature, as to the course and treatment of this phase of gonorrhœa."

Dr. Vernon Jones may be correct as to the absence of any work upon the subject, in the form of a monograph dealing solely with this single phenomenon of gonorrhœa, but since Antonii Störck, in 1769, and Gwediaur, in 1781, described this affection under the names of "gonocele" and "blenorrhagic swelling of the knee," much has been written about it by various authors on venereal diseases. Hunter reported a case which came under his observation in 1786, and subsequently such high authorities as Sir Astley Cooper, Sir Benjamin Brodie, Ricord, Bonnett, Fournier, and others, contributed to the literature of the subject. In more recent years E. L. Keys, Bumpstead, Taylor, and other writers on venereal diseases have included in their works valuable chapters upon Gonorrhœal Rheumatism, its pathology and treatment.

Dr. Vernon Jones takes exception to the term gonorrhœal rheumatism, as the affection has no connection whatever with the rheumatic diathesis. He selects to call it gonorrhœal arthritis, but this term is equally inappropriate and misleading in another direction, as is also that of urethral arthritis suggested by Mr. Howard Marsh, because arthritis is by no means a constant or even the most common manner in which this rheumatoid complication of gonorrhœa manifests itself. In our experience the muscles, intermuscular septa, the sheaths of tendons, the great fasciæ, the bursæ, and other structures external to the joints are more commonly the seats of this affection than the joints themselves, and that arthritis, like peritonitis, endocarditis or pleuritis, is only one of the graver complications which may occur in the course of any case of gonorrhœa.

The author refers to two cases recorded by Panichi in the *Brit. Med. Jour.*, Dec. 7, 1899, under the name of gonococcæmia, from which cultures were obtained, thus demonstrating that the inflammatory process which has been erroneously spoken of for so many years as gonorrhœal rheumatism is caused by the gonococcus and its toxins. The morbid condition may be further complicated and aggravated by the concurrent or subsequent action of pyogenic microbes;

then the disease will be properly described as gonococco-septicæmia.

Medical and Surgical Report of the Presbyterian Hospital in the City of New York. Vol. V. January, 1902. Edited by ANDREW J. MALEOCH, M.D., and W. GILMAN THOMPSON, M.D. New York: Trow Directory Printing and Bookbinding Company.

THE first thing that strikes the reader on taking up this Report is the number of persons associated with the hospital; there are 151 named under the titles—officers, managers, medical board, and so on. We suppose the explanation is that our American New-Englander likes to see his name in print; and as long as the charity is benefited there can be no objection.

The volume tells little of the work done in the hospital; but it contains twenty-four excellent papers dealing with cerebral surgery, intestinal growth, hernias, kidney operations, spinal injuries, and so forth.

The Diseases of Children. By JAMES FREDERIC GOODHART, M.D., LL.D., Aberd.; F.R.C.P.; Consulting Physician to the Evelina Hospital for Sick Children; Consulting Physician to Guy's Hospital, &c.; with the assistance of GEORGE FREDERIC STILL, M.A., M.D., F.R.C.P.; Assistant Physician for Diseases of Children to King's College Hospital; Assistant Physician to the Hospital for Sick Children, Great Ormond-street. London: J. & A. Churchill. 1902.

THIS seventh edition of Dr. Goodhart's book will be hailed with satisfaction. The authors have thoroughly revised it, and it, hence, surpasses its predecessors. We can here merely briefly notice a few of the chief alterations and additions. There are new chapters on The New-born Infant, and Infant Feeding (that most difficult subject), of which an excellent summary is given. Touching the all-important question of starch, we are glad to notice that the authors condemn its administration in infancy in its unconverted forms.

We observe that the old classification of diarrhœa has been allowed to remain, but we think that this will have to be altered in future, and a division based upon ætiology adopted. Symptoms or morbid anatomy cannot here afford us reliable classifications, but ætiology will separate the dyspeptic from the infective varieties. The chapter on Stomatitis has been improved, and the classification of Dr. Forcheimer adopted with advantage. We are glad to notice that the discovery of so-called Koplik's spots in measles has been attributed to their original observer, Filatow. The chapter on diphtheria has been brought up-to-date. We think a little fuller description might have been given to vaccinia, for to such books one turns for fullest information of this subject. Laryngeal affections have been better put before the reader, and possibly as clearly as our present knowledge permits; but we still observe great caution exhibited in classifying the so-called "croup" series of diseases. We hope that pathology will soon admit of more definite statements on these points.

The chapters on Tuberculosis and Pulmonary Tuberculosis are fresh, and the old pathology of these diseases has been eliminated. The surgical treatment of empyema is very well discussed. The Great Ormond-street statistics on Tubercular Mediastinal Glands in Bronchial Phthisis, and on Tubercular Peritonitis, are also valuable adjuncts to this edition.

The article on Jaundice in Children has been improved, and a fresh description is given of functional albuminuria. We gather that the authors still advise against nephrectomy in sarcoma of the kidney.

Intracranial tumours are clearly dealt with, and an interesting case is recorded of successful removal of a cerebellar tumour from a boy in King's College Hospital, who, eighteen months later, was in good health and had lost his optic neuritis and all other symptoms.

Many improvements, too numerous to discuss, are found in the section on nervous diseases. Chapters have been added or completely re-written on Cerebral Palsies, Muscular Atrophy, and Pseudo-hypertrophy, Ataxic Conditions, Nystagmus, and Cervical Opisthotonos of Infants, and Pavor Diurnus.

In the chapter on Functional Nervous Disorders, which has been revised, the paragraph on chorea now embraces Dr. Poynton's investigations on the diplococcus of rheumatism, and Sir Thomas Barlow's treatment by warm packs. We miss, however, any allusion to the former when treating of rheumatism specially. The chapters on Heart Disease and Infantile Scurvy (scurvy rickets) have been re-arranged.

In the whole book we can find only one printer's error, where on page 600 the word "tetany" appears for the second time in large print.

Nothing but praise can be given to this work, and it well holds its place as one of the most reliable English text-books on this subject, if not the first. The charm of the original work has been preserved, while being brought well up-to-date it now ranks as a "classic."

There are no illustrations, but Dr. Goodhart's "word-painting" and Dr. Still's science are more valuable, while the blend of the two distinguished minds can be beautifully traced throughout all pages of the volume.

Diseases of the Nose, Pharynx, and Ear. By HENRY GRADLE, M.D. London: Saunders. 1902. Pp. 547.

IN order to give some idea of the scope of the work under review, and the intention of the author, the easiest plan will be to quote from the preface, as follows:—"This volume is intended to present disease as the author has seen it during an experience of nearly twenty-five years, while in touch with the work of others. It has been the author's aim to answer in detail those questions regarding the course and outcome of diseases, which cause the less-experienced observer the most anxiety in an individual case—questions to which an answer is not easily obtained from the text-books."

To carry out the above idea the author commences with a full account of the surgical anatomy of the regions under consideration; he bases his observations and culls his drawings from the works of Zuckerkandl and Hajek for the nose, &c., and Politzer for the ear, which in itself is sufficient to prove the soundness of his work. The reader will, with thankfulness, miss some old and worn out theories and treatments,

and in their place find the more accepted ones fully dealt with, and many excellent hints added. Padding is conspicuous by its absence. When the author has finished he stops, and thus there is presented to us a book which gives us what generally happens, and what is best to do for it.

The book is excellently arranged for reference into numbered paragraphs. The type is good and the illustrations clear, but hardly up to the standard of some of the recent medical works. Most of the ordinary operations in daily use are mentioned, and the difficult points elucidated. The chapters devoted to the consideration of the accessory sinuses of the nose, and to the various forms of middle ear catarrh, are worthy of special mention.

The work may be recommended with confidence, and will well repay the time spent in its perusal.

Diseases of the Intestines: their Special Pathology, Diagnosis and Treatment. By JOHN G. HEMMETER, M.D.; Professor in the Medical Department of the University of Maryland; Consultant to the University Hospital, and Director of the Clinical Laboratory. In Two Volumes. With many Original Illustrations, some in Colours. London: Rebman, Ltd. Vol. I. 1901. Pp. 742. Vol. II. 1902. Pp. 679.

THESE two exceedingly handsome volumes form a valuable addition to the literature of Diseases of the Intestines. They are written from the most modern and advanced standpoint; they are full of references to recent publications, especially American and German; and, taken together with Prof. Hemmeter's recently published work on Diseases of the Stomach, they form a Text-book on the Alimentary Canal which for size and fulness is, as far as we know, unique in English Medical literature.

The work is divided into three parts. In the first the Anatomy and Physiology of the Intestines are treated of. Dr. W. R. Stokes is the author of a chapter on the Bacteriology of the Intestines in Health and Disease, and Dr. H. Adler writes on the Examination of the Fæces. Prof. Hemmeter devotes considerable attention to the description of the

methods of examination of the intestines: he has demonstrated the possibility of directly investigating the secretions of the duodenum, which he obtains by means of a tube passed into it through the pylorus. A chapter is devoted to this subject, and two methods of introducing the tube are fully described.

The Second Part contains chapters on the Diet and Materia Medica of Intestinal Diseases. Useful lists are given of foods suitable in Diarrhœa, in Constipation, and in other conditions. Massage and Hydropathic Treatment are also discussed. These chapters on treatment are based more on German than on English models, and contain a good deal that is new to most English medical men. The author has a high opinion of the value of subcutaneous feeding as a supplementary mode of alimentation. He has injected 100 c.c. of sterilised olive oil daily in cases in which oral and rectal feeding were contra-indicated or insufficient.

The Third Part, which forms about three-fourths of the whole, is entitled "Intestinal Clinic," and consists of chapters on the Various Diseases of the Intestines. The accounts of the different diseases are usually clearly written, especially in the case of the description of the less important or rarer diseases, to which only a few pages are allotted. In some of the longer articles it seems to us that the author quotes so many authorities, and mentions so many divergent opinions, that the mental picture of the disease, its pathology and treatment, becomes a little confused. But, after all, perhaps that is not such a great fault. A work of this size must necessarily be used mainly as a book of reference, and in such a case it may be of use to be able to learn the opinions of many observers.

Dr. Hemmeter's views on treatment strike us as being rational, cautious, and trustworthy.

There is a chapter on Diseases of the Rectum by Dr. Martin, Professor of Proctology in Cleveland College; it is very fully illustrated.

We feel we must call attention to one feature in this work, which detracts from its value: it appears to have been composed hastily; it gives us the idea as if sufficient trouble had not been taken to arrange every part in its logical and correct

position. Thus we find paragraphs on the same subject scattered in various parts of the work, and sometimes the heading of a paragraph does not quite correspond with the subject treated of in the succeeding lines.

We have noticed but few misprints. On page 399, Vol. I., NH_4 should be CH_4; and at the top of page 576, Vol. II., we read that the eggs of oxyurides are not discharged till after the parasite leaves the intestines of the host; while ten lines lower we read that the females deposit their eggs in the lower part of the large intestine.

The work contains a great deal of information, and will be found useful as a book of reference.

Dynamic Aspects of Nutrition and Heredity. By FRANK HORRIDGE. London: Baillière, Tindall, & Cox. 1902. Crown 8vo. Pp. 175.

THE author of this interesting volume has undertaken the execution of a truly colossal task within the limits of a small space. He must also receive the credit of having conscientiously prepared himself for the completion of his self-selected duty, in mastering and arranging the vast and complicated details of the scientific material which is requisite in the discussion of the problems which he has chosen for solution. As he very justly observes, with the rapid advancement of the elucidation of the properties of matter during recent years, the investigation of *force*, in biological science, "has never really emerged from the background." And the importance of the latter is duly emphasised in the forcible and truthful statement that—"Force is the one factor in the calculations of modern research which escapes our ken, the impalpable element in all our problems, the unknown quantity, the eternal X in the algebra of science. It appears in many guises—as wind, water, steam, light, heat, chemical energy, molecular vibration, sound, magnetism, nervous impulses, and electricity; now gathering its units into a single wave, now scattering them over a broad expanse, sometimes storing itself with slow and steady progress, and bursting forth into rapid and violent shocks, transferring itself with surprising suddenness, according to the conditions

of the media through which it passes; always in a sense active, always invisible, and yet never really lost." Our author has undertaken the arduous and important task of indicating the various ways in which force may ultimately manifest itself by the effects of its action on living tissues. This he endeavours to do by investigating, with the "mind's eye," the ultimate structure of the latter; and so arriving at an explanation of macroscopical manifestations of physical phenomena in living organisms by mental dissection of their ultra-microscopical components.

The scientific task which the author has allotted himself is an ultra-Herculean one. Its complete performance would require probably a greater than Solomon in wisdom and physical knowledge, and a longer-lived than Methuselah in the department of indispensable time. But we must congratulate Mr. Frank Horridge on the broad simplicity of his views, on the vast amount of sound physical knowledge which he has brought to bear on the solution of the problems which he has proposed to discuss; and on the clear judgment and keen discrimination displayed throughout the whole of this endeavour to unravel the tangled skein of physical facts and entities which go to make up the materials of this bewildering universe of ours. All the phenomena of which our senses give us evidence are ultimately reducible to atomic movement. To discuss the infinite phases of atomic movement is entirely beyond our limits. Accordingly, we recommend all thinking readers to examine this suggestive volume, and form their own opinions. We have no doubt that the author has indicated the proper direction for future investigation, even if he has not reached so near the goal as he seems to think.

We thank him cordially for the intellectual treat which he has given us, and his publishers (Messrs. Baillière, Tindall, & Cox) for having added another important item of furniture to our most valued and most frequently-used bookshelf.

A Text-Book of Insanity. By CHARLES MERCIER. London: Swan, Sonnenschein & Co. 1902. Sm. 8vo. Pp. 222.

IT is related of Thackeray that praise of his work, seriously intended, made him intensely grave. If this be the proper

attitude towards sincere flattery Dr. Mercier should be one of the gravest of men, for his great book, "Psychology, Normal and Morbid," has been received, not alone with general praise, but with that consideration from the judicious which he will probably esteem even more flattering than open commendation. And now this small handbook for students will doubtless command an approbation equally general. For not only is it excellent in itself, but there is certainly not so good a view of insanity to be obtained from any other work in so short a compass.

The book is divided into three parts:—I. The Institutes of Insanity. II. Forms and Varieties of Insanity. III. Legal Relations of Insanity. The first part is again divided into four chapters, dealing respectively with Conduct, Mind, Certifiability and Fitness to be at Large, and Ætiology. "Conduct," our author tells us, "is the pursuit of ends." Again, "conduct is the main thing that is disordered in insanity." A brief but acute analysis is given of the modes of conduct and the ways in which each is liable to disorder. In a similar fashion disorders of mind, in the limited sense of the word, are analysed in a striking manner. With regard to the question of certifying, Dr. Mercier lays down that "every case of acute insanity should be at once placed in an institution," that "general paralytics invariably require to be detained in an institution," and that "all paranoiacs ought to be detained in institutions."

In a very philosophic chapter on the Causes of Insanity much weight is given to original constitution. Heredity appears to be either a deficient impetus in the process of development or an inability to bear "stress." Under individual causal factors it is refreshing to hear that "the religious circumstances in which a person lives have not, at any rate nowadays, much influence upon his sanity," and that at the present time "masturbation as the prime and sole cause of insanity has been abandoned in favour of 'toxins.'" Old superstitions, even in medicine, die hard, however, and we shall expect to hear of "religious" insanity and insanity due to masturbation for many years to come.

The second part of this book is devoted to classification and clinical description. Dr. Mercier, undeterred by the

difficulty of the subject and by the failure of all previous writers to produce a wholly satisfactory classification, has put forward a fresh view of the division of insanity. He proposes to consider mental diseases under two heads—I. Forms of insanity which are aggregates of symptoms; and II. Varieties of insanity. "By a variety is meant a specific course that a case may run from beginning to end, usually combined with an assignable cause." The forms of insanity are said to be:—(*a*) Weakmindedness; (*b*) stupor; (*c*) depression; (*d*) excitement; (*e*) exaltation; (*f*) suspicion; (*g*) systematised delusion; (*h*) obsession and impulsiveness; (*k*) moral perversion. The varieties:—(1) Idiocy and imbecility; (2) dementia; (3) stupor; (4) acute delirious mania; (5) acute insanity; (6) fixed delusion; (7) paranoia; (8) recurrent insanity; (9) insanity of reproduction; (10) insanity of times of life; (11) insanity of alcohol; (12) general paralysis; (13) insanity of epilepsy; (14) insanity of bodily disease. Under these various headings the clinical facts of insanity are described, and this mode of dealing with the clinical aspect of the subject by what might be called a method of cross-reference is impressive upon the student; but we cannot see that Dr. Mercier's classification will solve the difficulty of the question as he seems to hope. Thus the existence of stupor, and pre-eminently of dementia, as varieties, under his definition of a variety, may be disputed; while paranoia or fixed delusion may be climacteric or alcoholic in origin. In fact a classification which is partly symptomatic and partly ætiological, though it may be the best attainable, can never be perfectly satisfactory. The clinical observations in this section of the work are often extremely acute, and are always stated with a crispness and definiteness of style very valuable in a student's text-book.

The third part of the work is devoted to the legal relations of insanity. It is of great excellence and brevity. With regard to certifying the ingenious plan is adopted of adding in an appendix a faulty certificate, showing in a graphic way the errors into which the certifying physician is liable to fall. The most important of these arise from sheer ignorance of the symptoms of insanity, but also not a little from the innate difficulty of detailing proofs of insanity in clear and convincing

language in the brief space afforded by the limits of the certificate. This portion of Dr. Mercier's work will be, perhaps, equally important to the Irish practitioner with the clinical part, since the slackness of the Irish law with regard to certifying, and the contempt with which the Irish licensing bodies treat the teaching of psychiatry, have combined to bring it about that an Irish certificate in lunacy is very commonly, in spite of its vast importance, about the most unlearned, vague, inept, and discreditable document to which a physician places his hand.

The Treatment of Fractures. By CHARLES LOCKE SCUDDER, M.D.; Assistant in Clinical and Operative Surgery, Harvard University Medical School; assisted by FREDERICK J. COTTON, M.D. Second Edition. Revised. London: Saunders & Co. 1901. 8vo. Pp. 485.

THE first edition of this work was issued in 1900. The fact that a second edition was placed on the market so rapidly as this present one shows that the book has been well appreciated by the profession. The letterpress and the illustrations are excellent; our only wonder is that the authors have been able to publish so full an account of the treatment of fractures, while they have kept the book within manageable limits of size; but, as is natural where the strictest attention has been paid to condensation, the value of the work as an up-to-date treatise on fractures suffers. Some even of the improvements might, we think, have been omitted. What good purpose does it serve to substitute "closed" and "open" for the time-honoured terms "simple" and "compound" in the description of fractures? In our opinion none; and the short space taken up in directing attention to the change is wasted.

On many points the authors excite our interest, especially in discussing symptoms, but apparently in their desire for brevity they leave us without the means of allaying our excitement.

In their Preface they tell us that "a series of clinical cases has been introduced to render more helpful the chapter upon skull fractures." In following the account of the symptoms

of value in the diagnosis of these fractures, we come on a remarkable statement:—"The most important symptom of intracranial hæmorrhage is the interval of consciousness that exists from the time of the injury to the onset of unconsciousness"—well and good; but the authors say, in discussing, a few lines further on, the duration of this interval:—"The duration of the interval of consciousness may vary within very wide limits; it may be a few moments, it may be three months." In the desire to see the details of the example which the authors must have had in their minds when fixing this extreme limit of "three months" we turn to the series of clinical cases above referred to. The series consists only of three cases, and we find not a word bearing on the point we have alluded to.

In the study of the fractures of the middle fossa of the skull we find the following strange passage:—"If the petrous portion of the temporal bone is fractured, several important signs appear. If the tympanum is torn, hæmorrhage from the external auditory meatus is sure to follow. If this hæmorrhage is continuous, it is significant; if it is trifling and temporary, it is probably unimportant. Cerebral tissue may escape from the nose, thus establishing the seat of lesion. Cerebro-spinal fluid may also appear at the external auditory meatus." It is clear that symptoms of the escape of brain substance from the nose is introduced in this relation by error. Further on a careless statement is also made:—"A primary profuse watery discharge from the nose or the ear is probably cerebro-spinal fluid. A watery discharge appearing late after such an injury is likely to be serum from a blood clot." Surely a symptom of so great importance should at least demand the application of the ready chemical test for the distinction of such fluids; but no mention is made by the writers of the method.

Passing to another chapter, on looking to the account of the ordinary fracture of the clavicle, we find this strange description of the displacement seen in this injury—"The shoulder, having lost the support of the clavicle, falls forward and drops inwards, consequently the outer fragment that moves with the shoulder drops below the inner fragment and overlaps it in front. The inner fragment, having attached

to it the sternocleido-mastoid muscle, and being comparatively free to move, is drawn slightly upward." The outer fragment does not overlap the inner in front, nor is the inner fragment drawn slightly upward, while the great pectoral muscle counterpoises the sterno-mastoid. While one cannot but notice the doubtful character of many details in descriptions of injuries, nothing attracts more attention than the exact and simple illustrations of treatment of most of the fractures, notably of the clavicle.

The category of fractures of the upper end of the humerus is very faulty, for while the authors write freely in the text, of impacted fractures the following list takes no notice of them :—

"After injury of the shoulder the following fracture lesions may be present, and are to be considered :—

"Fracture of the anatomical neck of the humerus."

"Separation of the upper humeral epiphysis."

"Fracture of the surgical neck of the humerus."

This list puts aside all consideration of the fractures of the greater or lesser tuberosities, either as separate injuries or as lesions secondary to the impacted fractures and the discussion of the details of the impacted fractures, but in these days of X-ray diagnosis the surgeon, ignorant of them, will be quickly found out; we need here only refer again to the excellence and practical character of the illustrations throughout the book.

The Surgical Anatomy and Operative Surgery of the Middle Ear. By A. BROCA; Surgeon to the Trousseau Hospital; Supernumerary Professor to the Faculty of Medicine of Paris. Translated by MACLEOD YEARSLEY, F.R.C.S.; Surgeon to the Royal Ear Hospital, &c. London: Rebman, Limited. 1901. Pp. 62.

THE subject of this little monograph is conveniently divided into three parts.

The first is devoted to the surgical anatomy, in which is brought into prominence the various landmarks, a thorough knowledge of which is absolutely essential if success is to attend the surgeon's operative processes. The knowledge of

where to attack the disease and what must be left alone and avoided is clearly shown.

The second part describes the operative procedures of opening the mastoid; opening the mastoid and tympanum; Stäcke's operation; opening the mastoid, the tympanum, and the cranium; and, finally, the operation of opening the cranium by the mastoid route. Each of these procedures is clearly and succinctly described.

The third part consists of an Atlas which shows the variations of the relations of the cavities of the middle ear from birth to adult age. In this the various developmental details are well displayed. In this part also are reproduced a number of drawings taken from preparations, which show most of the operative stages.

To the translator must be accorded the thanks of those of the profession who cannot read the original of a monograph of such immense importance, not only to the otologist but to the general surgeon, as that of Professor Broca. We cordially recommend the book to the study of every operating surgeon who may be called upon at any time to operate upon the results of suppurative otitis media.

Hygiene and Public Health. By LOUIS PARKES, M.D., D.P.H., Lond. Univ.; Fellow of the Sanitary Institute; Lecturer on Public Health at St. George's Hospital Medical School; Medical Officer of Health and Public Analyst for the Borough of Chelsea; late Assistant Professor of Public Health at University College, London; and HENRY KENWOOD, M.B., D.P.H., F.C.S.; Fellow of the Sanitary Institute, and Member of the Board of Examiners; Assistant Professor of Public Health at University College, London; Medical Officer of Health and Public Analyst for the Borough of Stoke Newington. Second Edition, with Illustrations. London: H. K. Lewis. 1902. Cr. 8vo. Pp. xii + 763.

THE first edition of this excellent work was reviewed in the number of this Journal for last August (Vol. CXIV., page 103). It is not necessary, therefore, to do more than announce the appearance of the second edition within a twelve-

month. The work has been carefully revised and brought up to date. In their Preface the authors acknowledge their indebtedness to Dr. D. N. Nabarro, of University College, for his advice and assistance in the preparation of the chapter on the Contagia and Communicable Diseases.

The book is in every way admirable. It is refreshing to find the word "siphon" so spelled, and correctly. The illustrations are good, while simple, numbering eighty-eight in all. We have much pleasure in again heartily recommending the work as one of the best text-books on Hygiene and Public Health with which we are acquainted.

The Edinburgh Medical Journal. Edited by G. A. GIBSON, M.D., F.R.C.P. Ed., and ALEXIS THOMSON, M.D., F.R.C.S. Ed. New Series. Vol. XI. Edinburgh and London: Young J. Pentland. 1902. 8vo. Pp. 604.

ONE of the features of this first-class medical monthly is the beauty of the illustrations which adorn its pages. The present volume is especially attractive in this particular. Perhaps the finest series of Plates is that which includes Plates VI.–IX., illustrating an important article by Dr. A. Logan Turner, of the Deaconess Hospital, Edinburgh, on the submucous areolar tissue of the larynx and its significance in the spread of œdema. The plates tell their own story almost without reference to the text.

The eleventh volume fully maintains the reputation of "The Edinburgh Medical Journal."

The Diagnosis of Surgical Diseases. By DR. E. ALBERT; late Director and Professor of the First Surgical Clinic at the University of Vienna. Authorised Translation from the Eighth Enlarged and Revised Edition. By ROBERT J. FRANK, A.M., M.D. With 53 Illustrations. London: Henry Kimpton. 1902. Pp. 419.

THE volume before us presents to the student and practitioner many of the problems in the diagnosis of surgical affections with which they are often confronted at the bedside.

As far as the book goes it will do much to assist the student

and junior practitioner. But many of the conditions more difficult of diagnosis and often more urgently calling for treatment than those described are completely overlooked, or so scantily dealt with as to be of very little value, while some methods of arriving at a diagnosis are described which are quite unnecessary, and one at any rate positively dangerous—*i.e.*, in dealing with the diagnosis of the site of the obstruction in cases of intestinal obstruction the following occurs:—"The examination per rectum by means of the entire hand, after Simon, is of especial value. As Simon has shown, the fingers may reach well into the sigmoid, and if this is raised, the belly may be palpated still higher up, even as far as the ensiform. By this method a constricting band or a hard mass may often be reached." Such teaching as this we must unhesitatingly condemn as not only dangerous but, in our opinion, misleading and unscientific. It savours more of mediæval than of modern methods of arriving at a diagnosis.

On the whole, the book is one which will be found useful to the student and junior practitioner.

Atlas and Epitome of Operative Surgery. By DR. OTTO ZUCKERKANDL; Privat-docent in the University of Vienna. Second Edition. Revised and Enlarged. Authorised Translation from the German. Edited by J. CHALMERS DA COSTA, M.D.; Professor of the Principles of Surgery and of Clinical Surgery in Jefferson Medical College, Philadelphia; Surgeon to the Philadelphia Hospital, &c. With 40 Coloured Plates and 278 Illustrations in the Text. Philadelphia and London: W. B. Saunders & Co. 1902. Pp. 410.

MANY improvements and additions will be found in this edition when compared with the first edition, which appeared but a few years ago, and was favourably reviewed in the number of this Journal for May, 1899. Some new plates and figures will be found on the surgery of the joints and amputation; but the most important additions are to be found in connection with the surgery of the head and neck, the surgery of the breast (in this connection most of the figures and plates are

new), and the surgery of the abdomen. The whole section devoted to the operations on the stomach is new.

The description of most of the operations is still meagre, but greatly assisted by the beautiful illustrations. Again we have pleasure in recommending the book to those preparing for the higher examinations.

A Text-book of Medical Jurisprudence, Toxicology, and Public Health. By JOHN GLAISTER, M.D., D.P.H. (Camb.); F.R.S.E.; Professor of Forensic Medicine and Public Health in the University of Glasgow; Fellow of the Faculty of Physicians and Surgeons, Glasgow; Licentiate of the Royal Colleges of Physicians and Surgeons of Edinburgh; Examiner in Medical Jurisprudence and Hygiene to the Royal Colleges of Physicians and Surgeons, Edinburgh, and the Faculty of Physicians and Surgeons of Glasgow for Diplomas in Medicine and Surgery, and Examiner in Public Health for the Diploma in Public Health for these United Corporations; Senior Medico-Legal Examiner in Crown Cases for Glasgow and Lanarkshire, &c. With 238 Illustrations. Edinburgh: E. & S. Livingstone. 1902. Pp. 820.

THIS volume deals in a lucid manner with the subjects named on its title page.

The portion of the work which deals with Medical Jurisprudence occupies 382 pages, and contains records of many cases which have occupied the attention of the Law Courts in recent years in which medical evidence has played an important part.

As befits a work written by a Glasgow professor, much space is devoted to the consideration of Scots law. At the same time the requirements of the English reader are not ignored.

Under the heading of "Personal Identity," the Bertillon, Henry, and British systems of identification of criminals are described in a clearer manner than we have elsewhere come across.

The gruesome details of some aspects of medical juris-

prudence, so dear to Continental writers, are touched on in a simple, cleanly manner, without unnecessary detail.

The section devoted to toxicology fills 140 pages, and deals with the commoner forms of poisoning, and with a good many which are exceedingly rare. The section is interesting, and may prove useful in doubtful cases.

Under the heading of "Public Health" we read with pleasure the history and description of the biological treatment of sewage, a method of disposal still in its infancy, and before which there is a great future.

While dealing with preventable diseases the history of plague and malaria is given with clearness; in the case of the latter disease Laveran, Manson, Ross, and the Italian observers have received the recognition they so well deserve.

Tuberculosis is also dealt with, but some of the diagrams taken from the Report on Tuberculosis of the Public Health Committee of the City of Edinburgh have suffered in clearness in the process of reduction.

The book is excellently printed, and the illustrations are almost all beautifully produced. It is a distinct gain to the literature of the subjects dealt with, and should prove of great value to candidates for the Diploma in Public Health as well as to those who require a reliable work of resonable size dealing with these subjects, for purposes of general practice.

A Laboratory Handbook of Urinary Analysis and Physiological Chemistry. By C. G. L. WOLF, M.D.; Instructor in Physiological Chemistry, Cornell University Medical College, New York. Illustrated. Philadelphia and London: W. B. Saunders. 1901. Pp. 203.

THIS is a well-devised and clearly-written work. It consists of a course of physiological chemistry, together with a guide to the examination of the urine and of the contents of the stomach.

The first part of the book contains the exercises in practical physiology. The experiments mentioned are described in simple language, and the directions are full and clear. Many questions are interspersed in the text, whereby the student

can test his progress. In the sections on urine and on the gastric contents the tests recommended are such as are well tried, and are not too elaborate for practical use. There are tables appended which show in a concise form the alterations in the urine produced by various disease.

The book is well written, and can be recommended as a practical and useful work.

Medical Ethics: A Guide to Professional Conduct. By ROBERT SAUNDBY, M.D., Edinburgh; Honorary LL.D. M'Gill; Honorary M.Sc., Birmingham; Fellow of the Royal College of Physicians of London; Vice-President (late President) of the Council of the British Medical Association; Emeritus Senior President of the Royal Medical Society; Fellow of the Royal Medical and Chirurgical Society; Member of the Pathological Society of London; Professor of Medicine in the University of Birmingham; Physician to the General Hospital, Birmingham; Consulting Physician to the Birmingham and Midland Eye Hospital; Consulting Physician to the Birmingham and Midland Hospital for Women; Late Examiner in Medicine to the Examining Board for England. Bristol: John Wright & Co. London: Simpkin, Marshall, Hamilton, Kent & Co., Limited. 1902. 8vo. Pp. 88.

THE opening years of the twentieth century still find human nature in its old and (regrettably) unregenerate state, and the particular section of the same which comprises the practising members of the medical profession in their former perennial need of a printed code of ethics; by which they are, or should be, guided in their conduct to their patients and to one another, in such a way as to insure the honour of the latter, and the mutual benefit of both. We have always had serious doubts, which have been sadly confirmed by the accumulating experience of advancing years, on the subject of the practical value of the publication and perusal of such charts of the *what to do* and *what to leave undone* in the course of the daily pilgrimage of professional life. But as there appears to be a prospect that such *Medical Courts of Honour* as those which now exist in Germany may be established in other progressive

countries—and they are much required in most of them—we are very pleased indeed to have to hand so well-prepared a text-book of professional morality as that which has been placed at our disposal by Professor Saundby.

Every member of our profession, who has been endowed by nature with the sympathies and instincts which every true gentleman possesses, is sure to follow the unerring path of morality and uprightness in his relations to his patients and to his professional brethren—without even taking the trouble of consulting a guide book. Those who have not been originally so gifted will hardly be kept to the narrow path of righteousness without external pressure, firmly and continuously applied. We find the following on page 9 :—"The Irish College of Surgeons goes so far as to exclude from professional relations even those who practise mesmerism; yet, under its modern name of hypnotism, this is quite a recognised and reputable method of practice. Although we may not all of us agree as to its value, no one would go so far as to say that the practice of hypnotism should place a man outside the professional pale, and in this respect at least it will be generally agreed that the Irish College goes too far." We admit that the rigidity in this case is somewhat strained. But the Irish College of Surgeons has, in other directions, displayed very remarkable elasticity; so that there is, perhaps, a possibility of its future adoption of the author's views.

Transactions of the Dermatological Society of Great Britain and Ireland. Edited by WILLIAM T. FREEMAN, M.D., F.R.C.S.; and CHARLES HERBERT THOMPSON, M.D. 1899–1900. Vol. VI. London: Printed for the Society by H. K. Lewis.

THE present volume of the "Transactions" contains a full report of Mr. Jonathan Hutchinson's Introductory Address: "Diseases of the Nails, with Special Reference to their Significance and Symptoms," in which the distinguished dermatologist impresses on his hearers the necessity of a close study of the "inner man" of all their patients, as well as the outer covering.

We regret that the discussion is printed in small type—

clear, beautiful type—but all the same we prefer the large, easily read type, and the difference in cost is practically nothing.

Dr. Radcliffe Crocker gave the Presidential Address, taking as his theme "The Influence of the Individual on the Character of and Development of Diseases of the Skin"—a factor which makes ætiology so unsatisfactory as a basis for the classification of skin disease. Dr. R. Crocker deals with the ætiology from the auto-intoxication point of view, and considers that the doctrine of auto-intoxication, with and without bacillary intervention, gains in probability and acceptance to a remarkable degree. The "Transactions" are a valuable addition to the literature of dermatology.

King's College Hospital Reports; being the Annual Report of King's College Hospital and the Medical Department of King's College. Edited by NORMAN DALTON, M.D., F.R.C.P.; ALBERT CARLESS, M.S., F.R.C.S.; JOHN PHILLIPS, M.A., M.D., F.R.C.P.; and W. D. HALLIBURTON, M.D., F.R.S. Vol. VII.—October 1st, 1899, to December 31st, 1900. London: Printed by Adlard & Son. 1901.

THE present volume represents the hospital work of fifteen months, as it was found more convenient for the Registrars to terminate the year's work in December. Commencing with a description of the new laboratories that have been built, we get in the Report "In Memoriam" notices of Dr. Hughes, who met his death from enteric fever contracted in South Africa, where he was in charge of the Welsh Hospital, the creature of his enthusiastic and patriotic temperament. Another pupil of King's Hospital, Dr. Henry Ernest Hill Smith, met his death by a fall from a horse whilst acting as P. M. O. at Cairo. He had been through the Egyptian and Soudan Campaign, and the Sirdar, Sir H. Kitchener, felt his loss so much that he issued a special order announcing his death.

The obituaries are followed by a very interesting series of papers on "The Use and Abuse of Opium;" on "Nervous Children," "The Chief Element of Danger in Anæsthesia," "Nocturnal Incontinence in Children," and one on "The Open-air Treatment of Phthisis."

The reports of the different departments follow, and we would just draw the attention of our readers to the excellent report of the anæsthetic department, and ask them to note that in 1,077 administrations of general anæsthetics ether was given throughout only 33 times. In one case "four ounces of chloroform were given on a towel in the space of an hour."

Saint Thomas's Hospital Reports. New Series. Edited by Dr. Hector Mackenzie and Mr. G. H. Mackin, C.B. Vol. XXIX. London: J. &. A. Churchill. MDCCCII.

In no other books is the progress of medicine so clearly shown forth as in the reports of the London Hospitals. The volume before us contains not alone a great mass of statistical information on disease, but furthermore a series of highly interesting and instructive articles on surgical and medical diseases by writers who speak from a fulness of knowledge which the most casual reader cannot fail to recognise.

An "In Memoriam" notice, accompanied by a portrait, of Dr. Corry, whose name was so long and honourably associated with the subject of vaccination, gives a good account of the life and labours of one of the last martyrs to science, whose enthusiasm and devotion to medicine cost him his life.

The Ready Reference Handbook of Diseases of the Skin. By George Thomas Jackson, M.D. (Col.); Chief of Clinic and Instructor in Dermatology, College of Physicians and Surgeons, New York, and to the New York Infirmary for Women and Children; Member of the American Dermatological Association, and of the New York Dermatological Society. With 80 Illustrations and 3 Plates. Fourth Edition. Thoroughly Revised. London: Henry Kimpton. 1902.

This book is what it professes to be—a ready reference handbook of skin diseases. No attempt has been made to discuss debatable questions, hence pathology and ætiology do not receive as much consideration as they otherwise would. But what the busy practitioner most requires—symptomatology,

diagnosis and treatment—are pretty fully dealt with. The best test of the book's usefulness is that in a comparatively short time it has reached the fourth edition. And we may add that this edition is much more than a reprint: it is a thorough revision of the book, a revision that has brought it abreast of the ascertained facts of to-day. The numerous formulæ of the book are included in the body of the text, and not relegated to the back pages, a decided advantage to a busy professional man.

Annual Report on the Year 1901. By E. MERCK, Darmstadt. 1902. 8vo. Pp. 207.

THIS valuable Report has now reached its 10th year of publication in English, and the 15th year of publication in the German language.

Its object is to collect and present the particulars added to the therapeutic history of useful and modern medicinal agents. The annual circulation of the Report is stated at 36,500 copies, of which 14,500 are published in English. The Report now before us contains 201 pages, consisting of Part I., which is devoted to original communications on opium tests. This work is justified on the truth of the criticism of the official tests for morphin—viz., that they yield 1 per cent. less morphin than is indicated by Ph.G. Pages 27–175, Part II., are given up to the epitomised history of selected medicinal substances.

In Part II., amongst the most important items may be mentioned the Cacodylates, which are dealt with at such length as is warranted by the attention which they are now arousing—aconitin, dionin, eumenol, jequiritol, lecithin, lanoform, hydrogen peroxide, compressed oxygen, hermophenyl, Calcium Glycerino-arsenate, amyl-salicylate, glyconic acid; and in Part III., ko-sam (Chinese) and casimivoa edulis. In addition may be noticed the continued usefulness of long-remembered substances, such as orpiment, calcium chloride and phenolphthalein.

Part III. contains some interesting, if not romantic, notes on five selected drugs. The observations on agar-agar by Kramer (*Klin. therap. Wochenschr.*, 1901, No. 42, p. 1391), recall the attempt made by surgery to supplement loss of

tissue by sponge-grafting. Prof. Kramer's researches are briefly stated in the Report under review as follows:—"In the course of his investigation of the treatment of penetrating wounds of the thorax, Kramer injected a gelatine heated to 40° C., consisting of 4 parts of agar-agar and 100 parts of physiological salt solution, into the thoracic cavity of animals, and noticed that within 48 hours the mass had lost its gelatinous character, and that it presented the appearance of a lump resembling the cardiac thrombi, originating in the agony. The agar gelatine appears in this case intersected by numerous round cells, by the action of which the mass is gradually absorbed, whilst at the same time its place is taken by newly-formed connective tissue. In inguinal hernia Kramer effected a complete closure of the hernial orifice by the injection of the agar mass. Naturally the injections have to be carried out under the same aseptic precautions as the gelatine injections."

The Report concludes with (1) a bibliographical index; (2) an index of authors; (3) a general index; (4) an index of diseases, symptoms, and indications for treatment; and (5) a chart showing approximately the prices for the principal remedies specified in the Report, classified under 6 headings, physostigmin sulphate being taken as the costliest type, and potassium iodide the representative of the 6th class.

The statement made by Herr E. Merck, that his Report should not be classed as a commercial publication for some special trade motive, is fully justified from the scientific and eminently useful character of his work.

An International System of Electro-Therapeutics for Students, General Practitioners, and Specialists. By Numerous Associated Authors. Edited by HORATIO R. BIGELOW, M.D. Second Edition. Thoroughly Revised and brought up to the present date. Edited by G. BELTON MASSEY, M.D. Thoroughly Illustrated. London: Henry Kimpton. 1902.

THIS big octavo volume is divided into seven sections. Of these the first is introductory, the second deals with electro-physics and electro-physiology, the third with gynæcology, the

fourth with diseases of the nervous system, the fifth with diseases of the abdominal and thoracic viscera, the sixth with diseases of children, and the seventh with electro-surgery.

There is a certain amount of convenience in having the whole therapeusis of electricity in one big volume; but we confess to an unpleasant feeling as we find disease after disease being treated by electricity; it reads somewhat like an advertisement of a quack remedy.

Electricity has its place in medicine just as baths have, and we like to read of them incidentally in the treatment of the affection for which an author may recommend them. But to have a large volume of laudation of electricity thrust upon us is to create a prejudice against a useful remedy.

The book is valuable as a reference work, and contains many useful suggestions on the electrical treatment of aneurysm, Röntgen rays, the cataphoresis of medicines, and such like; but to read the book right through would overtax Teufelsdorch.

The International Text-book of Surgery. By British and American Authors. Edited by A. PEARCE GOULD, M.S., F.R.C.S.; Surgeon to the Middlesex Hospital; Lecturer on Practical Surgery and Teacher of Operative Surgery, Middlesex Hospital Medical School; Member of the Court of Examiners, Royal College of Surgeons, England. And J. COLLINS WARREN, M.D., LL.D.; Professor of Surgery in Harvard Medical School; Surgeon to the Massachusetts Surgical Hospital. Vol. I. London: W. B. Saunders & Co. 1900. Pp. 947.

THE editors, in their Preface, state that they hope the reader will find only what is practically useful to-day, their aim being to produce a reliable text-book of surgery, embodying a clear, but succinct, statement of our present knowledge of surgical pathology, symptomatology, and diagnosis, and such a detailed account of treatment as to form a reliable guide to modern practice.

Toward the compilation of this volume no less than 27 different surgeons, each of whom has a wide experience and an established reputation, have contributed their quota.

To obtain recognised authorities, each to write on his own special subject, is undoubtedly an excellent idea, but in practice we find the subjects so dealt out to different writers frequently overlap, with the result that we either get a repetition, or, as more frequently happens, each assumes the other will deal with this part, and consequently, what is often an important subject is practically left untouched.

The volume before us is devoted to General and Operative Surgery. On the whole it is well written. Starting with a good chapter on surgical bacteriology, the reader will soon find himself immersed in an equally good one on inflammation, but here we cannot pass by unnoticed the theory of the formation of fibrin given on page 47, which is, that "fibrin is formed by the union of the fibrinogen of the blood plasma with the paraglobulin and fibrin ferment in the white corpuscles." There is no such theory to be found in any modern text-book on physiology. It is many years since it was exploded.

The section on ulcers is miserably defective.

Following this comes an excellent chapter on the surgical pathology of the blood—a very important subject that is conspicuous by its absence in most text-books with which we are acquainted. The chapters devoted to gangrene and aseptic surgery are also good.

Chapter XII. deals with operative and plastic surgery, but here we must confess to a disappointment. On page 319, in speaking of the relations of the carotids, the following sentence occurs:—"The carotid divides opposite the upper border of the thyroid cartilage. Here the external carotid is anterior, the internal posterior. This relation soon changes—the external carotid lying to the outer side and posterior to the internal carotid." This does not speak well for the writer's knowledge of anatomy, or for the carefulness of the revision on the part of the editors, as at the bifurcation of the common carotid the external carotid is situated internal to the internal carotid, while later on it (the external) becomes superficial, the internal carotid bearing a posterior relation to the external, and separated from it by the styloglossus and pharyngeus muscles, the glossopharyngeal nerve and the pharyngeal branch of the vagus, as well as the styloid process and a deep

part of the parotid gland. We also notice that with one exception—viz., in case of ligature of the common iliac artery—no mention is made of how the collateral circulations are carried on. In ligature of the superficial femoral artery in Hunter's canal the writer recommends the ligature to be passed from *within outwards and upwards* to avoid the vein. We have always been in the habit of teaching that the vein lay external and somewhat posterior at this situation, and that, consequently, the needle should be passed from *without inwards.*

In the chapter on fractures we think that the treatment recommended for those in the neighbourhood of the elbow-joint, in which the writer advises the practitioner not to make any attempt at passive motion before the fourth week, and even then very restricted, is open to criticism.

Chapters XV. on tumours, XIX. on diseases of bones, XXIV. on cranial surgery, and XXVI. on the surgery of peripheral nerves are very good; while Chapter XXV. on the surgery of the spine is excellent.

The volume is well illustrated, containing no less than 458 illustrations in the text and 9 full-page plates in colours.

Year-Book of the Scientific and Learned Societies of Great Britain and Ireland; comprising Lists of Papers read from January, 1900, to June, 1901, before Societies engaged in Fourteen Departments of Research. With the names of their Authors. Compiled from Official Sources. Eighteenth Annual Issue. London: Charles Griffen and Company, Limited. 1901.

THE full title of this valuable Year-Book puts the reader in possession of the objects aimed at by the publishers. How well the book meets the requirements of the student is apparent to all who use it regularly. For facility of reference in medicine and as a guide to the trend of medical opinion it is most useful. Indeed the same may be said for almost every branch of science, and it gave us much pleasure to see that even the last edition of the Encyclopædia Britannica felt called on to acknowledge the excellence of the book as a work of reference.

PART III.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—LOMBE ATTHILL, M.D., F.R.C.P.I.
General Secretary—JOHN B. STORY, M.B., F.R.C.S.I.

SECTION OF ANATOMY AND PHYSIOLOGY.

President—D. J. CUNNINGHAM, F.R.C.S.I., F.R.S.
Secretary—W. TAYLOR, F.R.C.S.I.

Friday, May 30, 1902.

THE PRESIDENT in the Chair.

The Stomach in the Child.

THE PRESIDENT read a paper on, and exhibited a model of, the stomach in a child. The model exhibited was made from the stomach of a child, aged two and a-half years, and was obtained some years since, prior to the introduction of the formalin process. The method he adopted was that of making a series of vertical sections through the frozen body, commencing in the mesial line. By this means he secured a series of slabs which were removed as required, and then a wooden model of the stomach was made. The specimen from which it was made had been previously removed from the vertical slabs and hardened in spirits. He confessed to a feeling of surprise when he found the stomach of so young a child in the horizontal position, with the œsophagus entering it on a line slightly anterior to the lesser curvature and at a right angle to the direction of the body of the viscus. It might also be noticed that the inferior surface of the organ was slightly flattened and marked with an indentation of the spleen from pressure of that

gland. All this was so opposed to preconceived views that he sent the model to Professor His, who was then engaged in similar investigations, for his opinion. His, in reply, said that the vertical position of the stomach in early life was the rule, and he looked on this horizontal condition as abnormal. The second specimen was that of the stomach of a chimpanzee, prepared by the formalin method, which shows an identical condition of affairs.

PROFESSOR BIRMINGHAM said the specimen of the chimpanzee showed very beautifully the S. curve of the pyloric extremity which formed the antrum of the pylorus.

DR. T. G. MOORHEAD said that in examining the position of the stomach in fœtuses by the formalin process he found some were vertical in position and some horizontal—there seemed to be no constant condition.

The Weight of the Viscera in the Right and Left Sides of the Mesial Plane of the Abdominal Cavity.

DR. T. G. MOORHEAD read a paper the object of which was to prove that as early as the fifth month there is a preponderance in weight of the viscera lying to the right side of the mesial plane in the fœtus over those in the left, and that this difference is due to the grouping of the abdominal organs. The average weight in the right side represented 52·8 per cent. of the total weight of the viscera, as against 47·2 per cent. in the left side. The child therefore enters upon its extrauterine existence with a marked right-sided bias.

THE PRESIDENT said the paper was most valuable, dealing as it did with the centre of gravity, a subject which had not been dealt with since Professor Struthers published his paper in 1863, which was almost directly due to Buchanan's views on the position of the centre of gravity in the human body. Struthers' investigations were on the adult body, and he had not the advantage of the formalin process; he also included the limbs in his calculations. He (Professor Cunningham) was of opinion that the bones of the right upper extremity, and to a slight extent the muscles also, were weightier on the right side.

PROFESSOR BIRMINGHAM said the paper was very interesting, though it had little bearing on the curious question of right-handedness, which he looked on as due more to the influence of the muscles of the forearm than to the location of the centre of gravity.

Recent Work on the Physiology of Digestion.

PROFESSOR W. H. THOMPSON read a paper on this subject in which he gave an account of some of the results at which Pawlow and his School of investigators, in the Institute for Experimental Medicine in St. Petersburg, have arrived. An improved method of obtaining gastric juice, invented by Pawlow, was first described. This allowed the juice to be collected—(1) at all times, (2) in pure condition, (3) in exact quantity, (4) while the stomach functioned normally, and (5) from an animal in perfect health. It was soon confirmed and, indeed, definitely proved that no juice whatever is secreted when the animal is fasting. It is not necessary, however, for the food to actually enter the stomach in order to excite a flow; chewing and swallowing, the bolus being intercepted at an opening in the neck leading into the œsophagus, or even the mere sight of food were sufficient to cause a secretion of juice. Pawlow then set about to determine the following amongst other points relative to the flow of gastric juice:—(1) Whether the amount poured out by the glands is in any way proportioned to the quantity of food eaten; (2) how the juice is poured out—that is, whether all or most of it is discharged at the beginning of the meal in one gush, or, on the contrary, by degrees and in declining quantities suitable to the gradual solution and removal of dissolved food; (3) whether the amount of pepsin—*i.e.*, the digestive power of the juice—is always the same, or does it vary in any way with the different phases of digestion; (4) whether the nature of the food has any influence on the quality of the juice—*i.e.*, whether the gastric glands are in any way able to adapt their secretion to the work it has to perform. Evidence was then detailed, which disclosed an exact quantitative relationship between the amount of food eaten and the juice poured out to digest it. The gastric glands in health work with the greatest precision, apportioning their labour with beautiful exactness to the magnitude of the task before them. Nor do the glands pour out all their fluid at once and leave matters to themselves, but "stand by" paying out more and more with strict economy as long as the needs of the case demand. The course therefore which gastric secretion runs is not by any means a matter of blind chance, but follows definite and purposive laws. The digestive power of the juice likewise varies with the stage of the meal, being greatest at the beginning, and gradually declining as digestion goes on. Most interesting, perhaps, of all is the fact that the glands are capable of adapting

their secretion to the kind of food presented them for digestion; the adaptation applying not only to the quantity of juice, but also to its contents of pepsin. Thus the greatest *amount* of juice was poured out on flesh, the least on milk, bread being intermediate. The *digestive power* of the juice is, however, greatest with bread and least with milk. The *total acidity* is greatest with flesh and least with bread. Professor Thompson also mentioned two recent functions which have to be ascribed to the acid of the gastric juice—one is a reflex closure of the pylorus, set up by its action on the mucous membrane of the duodenum; the other is a strong flow of pancreatic juice, likewise set up as an effect of the acid upon the same membrane. Professor Pawlow considered that this rather was also a reflex effect, but evidence has been adduced by Bayliss, Starling, and others to show that it is brought about through the blood channels. A substance which Starling calls *Secretin* is produced in the mucous membrane by the action of the hydrochloric acid and re-absorbed into the blood vessels. It is this which when carried to the pancreas promotes the flow of pancreatic juice.

THE PRESIDENT said the paper just read was one of the most important and interesting contributions ever made to the Section, and the subject was so lucidly dealt with that it was made intelligible to all.

PROFESSOR SCOTT said he thought some of the facts were open to a different explanation; the quality as well as the quantity of the proteid had to be considered. He also demurred to the conclusion that milk was easy of digestion; it might appear so because of its small percentage of proteids, 4 per cent., as compared with meat, 20 per cent. He would like to know if the secretion stimulating the pancreas was that of Brunner's glands.

PROFESSOR O'SULLIVAN said he could not altogether understand what Professor Starling meant to convey by saying this secretin which is prepared from the mucous membrane acted by working backwards through the blood vessels and was not able to pass into the lumen of the intestine.

DR. KIRKPATRICK said he would like to know if the percentage of acid varied with the pepsin. He looked on the subject from the point of view of tuberculosis, especially in childhood. How does the bacillus escape digestion? If the secretion in the early stage of milk digestion is small in amount, and weak in ferments, it is, of course, intelligible that the bacillus may pass through the pylorus in the early stage of the process, and so escape.

PROFESSOR BIRMINGHAM said he has always found the pylorus closed during periods of rest. He looked upon its being open as an active condition, and he would like to know how this harmonised with Pawlow's theory that the closure was a reflex act.

PROFESSOR W. H. THOMPSON, in reply, said Pawlow found the pyloric closure to be a reflex act caused by the free acid in the duodenum. When the acid was neutralised by the succus entericus the pylorus opened again, and this process continued until the digestion of the stomach contents was completed. He did not find a reflex opening, but he did find a reflex closure. Pawlow showed that the sight of food inhibited muscular movements of the stomach, the viscus being thus adapted to receive food. The percentage of acid was constant; tubercle infection in early life, he thought, was to be accounted for by the greater activity of the lymphatics in childhood. The fact that secretin did not pass into the intestine might be explained on the supposition that the mucous membrane behaved as a semi-permeable membrane to it. Pawlow found that cold water was a stimulant to secretion, taken at the beginning of a meal; next in order, but much more efficient, was meat extract. Contrary to accepted ideas sodium carbonate solution was found to inhibit gastric secretion. In this connection Pawlow made many interesting experiments with milk, and he found that milk fats inhibited digestion; his (Pawlow's) experiments were conducted with ordinary milk, milk to which cream had been added, cream, and milk deprived of all its fats, and he found that the digestive action was inversely proportionate to the percentage of fats.

The meeting then adjourned.

THE EAR COMPLICATIONS AND SEQUELÆ OF INFLUENZA.

THE *Laryngoscope* for March, 1902, contains a short article by Dr. M. A. Goldstein, of St. Louis, on the ear complications and sequelæ of influenza. He describes the acute otitis media of this affection as being one remarkable for its rapid onset, quick development, rapid involvement of surrounding parts, and the great intensity of its pain. Treatment must be prompt; an early paracentesis may save further involvement. He also notes that deafness is often extreme, and will be found to depend on an involvement of the Labyrinth, not necessary or indeed usually of a purulent nature. This obliges a cautious prognosis with regard to the complete restoration of hearing.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by Sir J. W. MOORE, B.A., M.D., Univ. Dubl.; F.R.C.P.I.; F.R. Met. Soc.; Diplomate in State Medicine and Ex-Sch. Trin. Coll. Dubl.;

VITAL STATISTICS.

For four weeks ending Saturday, October 4, 1902.

IRELAND.

TWENTY-TWO TOWN DISTRICTS.

The average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ending October 4, 1902, in the Dublin Registration Area and the twenty-one principal provincial urban districts of Ireland was 20·2 per 1,000 of their aggregate population, which, for the purposes of these returns, is estimated at 1,092,401. The deaths registered in each of the four weeks ended Saturday, October 4, and during the whole of that period, in the several districts, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

Towns, &c.	Week ending				Average Rate for 4 weeks	Towns, &c.	Week ending				Average Rate for 4 weeks
	Sept. 13	Sept. 20	Sept. 27	Oct. 4			Sept. 13	Sept. 20	Sept. 27	Oct. 4	
22 Town Districts	17·7	20·7	21·0	20·2	19·9	Lisburn -	4·5	4·5	4·5	4·5	4·5
Armagh -	6·9	13·7	13·7	6·9	10·3	Londonderry	16·6	20·5	19·2	10·2	16·6
Ballymena	38·3	28·7	0·0	4·8	18·0	Lurgan -	4·4	26·6	4·4	13·3	12·2
Belfast -	18·3	20·9	17·6	19·9	19·2	Newry -	0·0	12·6	8·4	16·8	9·5
Clonmel -	20·5	20·5	10·3	0·0	12·8	Newtownards	5·7	5·7	11·4	40·1	15·7
Cork -	14·4	19·2	22·6	24·0	20·0	Portadown -	5·2	10·3	5·2	0·0	5·2
Drogheda -	20·4	40·9	16·3	16·3	23·5	Queenstown	19·8	0·0	19·8	0·0	9·9
Dublin - (Reg. Area)	19·1	22·3	28·4	22·7	23·1	Sligo -	24·0	9·6	0·0	43·2	19·2
Dundalk -	8·0	8·0	12·0	16·0	11·0	Tralee -	0·0	26·4	37·0	5·3	17·2
Galway -	15·5	11·7	27·2	46·6	25·2	Waterford -	28·4	25·3	19·5	21·4	22·4
Kilkenny -	29·5	14·7	39·3	14·7	24·5	Wexford -	23·3	28·0	23·3	28·0	25·6
Limerick -	17·8	20·5	10·9	16·4	16·4						

The deaths (excluding those of persons admitted into public institutions from without the respective districts) from the principal zymotic diseases, registered in the 22 districts during the week ended Saturday, October 4, were equal to an annual rate of 3·9 per 1,000, the rates varying from 0·0 in fourteen of the districts to 14·4 in Sligo—the 9 deaths from all causes registered in that district including one from typhus, one from whooping-cough, and one from diarrhœa. Among the 137 deaths from all causes registered in Belfast are 7 from measles, 2 from whooping-cough, 7 from enteric fever, and 14 from diarrhœa. The 35 deaths in Cork comprise one from measles and 2 from diarrhœa. Of the 12 deaths in Limerick, one was caused by enteric fever, and one by diarrhœa; and the 11 deaths in Waterford also comprise one from each of these two diseases.

DUBLIN REGISTRATION AREA.

The Dublin Registration Area now consists of the City of Dublin as extended by the Dublin Corporation Act, 1900, together with the Urban Districts of Rathmines, Pembroke, Blackrock, and Kingstown. The population of this Area is 378,761; that of the City being 293,394, Rathmines 33,208, Pembroke 26,025, Blackrock 8,759, and Kingstown 17,380.

In the Dublin Registration Area the births registered during the week ended Saturday, October 4, amounted to 192—95 boys and 97 girls; and the deaths to 169—86 males and 83 females.

Deaths.

The registered deaths represent an annual rate of mortality of 23·3 in every 1,000 of the population. Omitting the deaths (numbering 4) of persons admitted into public institutions from localities outside the Area, the rate was 22·7 per 1,000. During the forty weeks ending with Saturday, October 4, the death-rate averaged 24·0, and was 2·6 below the mean rate for the corresponding portions of the ten years 1892–1901.

Deaths from measles, which had fallen from 13 for the week ended the 20th ultimo to 10 for the following week, further declined to 8 in the week ended Saturday, October 4. Five deaths from diphtheria were registered, being equal to the number for the preceding week. Six deaths from enteric fever, 7 (all of children under 5 years of age) from epidemic diarrhœa, 9 (all of children under 5 years of age) from *diarrhœa*, 3 from dysentery, one from whooping-cough, and one from influenza were registered.

The number of deaths from tuberculous diseases was 26—viz., 2 from tuberculous phthisis, 16 from *phthisis*, 4 from tuberculous meningitis, 3 from "other tuberculous diseases," and one from scrofula.

Carcinoma caused 2 deaths, and 2 deaths were returned as from *malignant disease* ("*cancer*").

There were 19 deaths from diseases of the nervous system, including 13 (all of children) from *convulsions*.

Diseases of the heart and blood-vessels caused 14 deaths.

The number of deaths from diseases of the respiratory system was 19, being 8 under the number for the preceding week. The 19 deaths represent an annual rate of 2·6 per 1,000 of the population, as compared with an average rate of 3·2 for the corresponding week of the last 10 years. They comprise 11 from bronchitis and 6 from *pneumonia*.

Three accidental deaths were registered.

In 8 instances the cause of death was "uncertified," there having been no medical attendant during the last illness. These cases comprise the deaths of 7 infants under one year old.

Eighty of the persons whose deaths were registered during the week were under 5 years of age (47 being infants under one year, of whom 13 were under one month old), and 21 were aged 60 years and upwards, including 8 persons aged 70 and upwards, of whom one was an octogenarian, and one (a woman) was stated to have been aged 93 years.

The Registrar-General points out that the names of causes of death printed above in italics should be avoided whenever possible in Medical Certificates of the Cause of Death.

STATE OF INFECTIOUS DISEASE IN DUBLIN.

(1.) Cases of Infectious Diseases Notified to the Public Health Committee of the Corporation.

Sir Charles A. Cameron, C.B., Medical Superintendent Officer of Health for the City of Dublin, has furnished information regarding the number of cases of infectious diseases in the City of Dublin notified under "The Infectious Diseases (Notification) Act, 1899," as follows :—

Week ending	September	13,	1902, ...	169 cases.
,,	,,	20,	,, ...	211 cases.
,,	,,	27,	,, ...	262 cases.
,,	October	4,	,, ...	239 cases.

Of the 239 cases notified in the week ended October 4, 14 were

erysipelas, 38 enteric fever, 23 scarlatina, 9 diphtheria, 141 measles, 9 "continued fever," one typhus fever, 2 rubella, and 2 varicella.

(2.) CASES OF INFECTIOUS DISEASE IN RATHMINES URBAN DISTRICT.

Mr. Fawcett, Executive Sanitary Officer for Rathmines Urban Council, has furnished information regarding the number of cases of infectious diseases in the Urban District of Rathmines notified under "The Infectious Diseases (Notification) Act, 1889," as follows :—

Week ending September	13,	1902,	.. ..	6 cases.
,, ,,	20,	,,	.. ..	6 cases.
,, ,,	27,	,,	.. ..	7 cases.
,, October	4,	,,	.. ..	5 cases.

Of the 5 cases notified in the last week, 2 were enteric fever, 2 were measles, and one was erysipelas.

(3.) CASES OF INFECTIOUS DISEASE IN PEMBROKE URBAN DISTRICT.

Mr. Manly, Executive Sanitary Officer for Pembroke Urban Council, has furnished information regarding the number of cases of infectious disease in the Urban District of Pembroke notified under "The Infectious Diseases (Notification) Act, 1889," as follows :—

Week ending September	13,	1902,	.. ..	12 cases.
,, ,,	20,	,,	.. ..	12 cases.
,, ,,	27,	,,	.. ..	3 cases.
,, October	4,	,,	.. ..	5 cases.

Of the 5 cases notified in the last week, 4 were measles and one was varicella.

(4.) CASES OF INFECTIOUS DISEASES UNDER TREATMENT IN DUBLIN HOSPITALS.

During the week ending Saturday, October 4, fifty-three cases of measles were admitted to hospital, being 4 over the admissions for the preceding week; 20 cases were discharged, there were 7 deaths, and 137 cases remained under treatment at the close of the week.

Thirty-three case of enteric fever were admitted to hospital, 15 cases were discharged, there were 2 deaths, and 103 cases remained under treatment at the close of the week.

Eleven cases of scarlatina were admitted to hospital, 13 cases were discharged, there were 2 deaths, and 76 cases remained under treatment at the close of the week. There were also 23

convalescent cases under treatment at Beneavin, Glasnevin, the Convalescent Home of Cork-street Fever Hospital.

One case of typhus was discharged, and 5 remained under treatment at the close of the week.

Six cases of diphtheria were admitted to hospital, 4 were discharged, 2 died, and 30 cases remained under treatment at the close of the week.

In addition to the above-named diseases, 5 cases of pneumonia were admitted to hospital, 5 patients were discharged, there was one death, and 8 cases remained under treatment at the end of the week.

Two cases of small-pox were discharged from hospital during the week.

STATE OF INFECTIOUS DISEASE IN THE CITY OF BELFAST.

Dr. Whitaker, Medical Superintendent Officer of Health, has furnished information regarding the number of cases of infectious diseases in the City of Belfast notified under "The Infectious Diseases (Notification) Act, 1889," as follows :—

Week ending	September	13,	1902,	.. ..	71 cases.
,,	,,	20,	,,	.. ..	74 cases.
,,	,,	27,	,,	.. ..	77 cases.
,,	October	4,	,,	.. ..	75 cases.

Of the 75 cases notified in the week ended October 4, 32 were enteric fever, 7 erysipelas, 3 diphtheria, 20 "continued fever," 10 scarlet fever, and 3 were membranous croup.

ENGLAND AND SCOTLAND.

The mortality for the week ended Saturday, October 4, in 76 large English towns, including London (in which the rate was 15·7), was equal to an average annual death-rate of 17·0 per 1,000 persons living. The average rate for eight principal towns of Scotland was 16·6 per 1,000, the rate for Glasgow being 18·5 and for Edinburgh 16·6.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ N., Long. 6° 15′ W., for the Month of September, 1902.

Mean Height of Barometer,	30·042 inches.
Maximal Height of Barometer (28th, at 9 a.m.),	30·504 ,,
Minimal Height of Barometer (3rd, at 7 15 a.m.),	29·141 ,,
Mean Dry-bulb Temperature,	54·9°.
Mean Wet-bulb Temperature,	53·1°.
Mean Dew-point Temperature	51·4°.
Mean Elastic Force (Tension) of Aqueous Vapour,	·382 inch.
Mean Humidity,	88·4 per cent.
Highest Temperature in Shade (on 22nd),	69·0°.
Lowest Temperature in Shade (on 18th),	41·6°.
Lowest Temperature on Grass (Radiation) (18th),	35·7°.
Mean Amount of Cloud,	59·3 per cent.
Rainfall (on 16 days),	2·969 inches.
Greatest Daily Rainfall (on 2nd),	2·075 inches.
General Directions of Wind,	N.E., W.

Remarks.

Notwithstanding a violent rainstorm on the 2nd and 3rd, which yielded 2·075 inches out of a total rainfall of 2·969 inches for the month, September, 1902, proved favourable. The mean temperature was a shade (0·2°) above normal. The percentage of cloud was 59·3. Fog was prevalent in anticyclones from the 6th to the 8th and from the 24th to the 28th, inclusive. The duration of bright sunshine was estimated at 139·5 hours, or 37 per cent. of the possible duration, equal to a daily mean of 4·7 hours, compared with a twenty years' mean of 143·4 hours recorded at the Ordnance Survey Office, Phœnix Park, or 38 per cent. of the possible duration. The most prevalent winds were N.E. and W.

In Dublin the arithmetical mean temperature (56·1°) was slightly above the average (55·9°); the mean dry-bulb readings at 9 a.m. and 9 p.m. were 54·9°. In the thirty-seven years ending with 1901, September was coldest in 1886 and 1892 (M. T. = 53·0°), and warmest in 1865 (M. T. = 61·4°) and 1898 (M. T. = 60·2°). In 1901 the M. T. was 57·7°.

The mean height of the barometer was 30·042 inches, or 0·132 inch above the corrected average value for September—namely, 29·910 inches. The mercury rose to 30·504 inches at 9 a.m. of the 28th, having fallen to 29·141 inches at 7 15 a.m. of the 3rd.

The observed range of atmospheric pressure was, therefore, 1·363 inches.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 54·9°, or only 2·4° below the value for August, 1902. Using the formula, *Mean Temp.* = *Min.* + (*Max.* — *Min.* × ·476), the mean temperature was 55·8°, or 0·2° above the average mean temperature for September, calculated in the same way, in the thirty years, 1871–1900, inclusive (55·6°). The arithmetical mean of the maximal and minimal readings was 56·1°, compared with a thirty years' average of 55·9°. On the 22nd the thermometer in the screen rose to 69·0°—wind, S.; on the 18th the temperature fell to 41·6°—wind, W.N.W. The minimum on the grass was 35·7°, also on the 18th.

The rainfall was 2·969 inches, on 16 days. The average rainfall for September in the thirty-five years, 1866–1900, inclusive, was 2·220 inches, and the average number of rainy days was 15. In 1871 the rainfall was very large—4·048 inches on, however, only 13 days; in 1896 no less than 5·073 inches fell on 23 days, establishing a record rainfall for September. On the other hand, in 1865, only ·056 inch was measured on but 3 days. In 1901, 3·686 inches fell on 18 days.

High winds were noted on only 6 days, and attained the force of a gale on 2 occasions—the 3rd and 21st. The atmosphere was foggy on the 6th, 7th, 8th, 19th, 24th, 26th, 27th, and 28th. Solar halos were observed on the 4th and 19th.

The rainfall in Dublin during the nine months ending September 30th amounted to 21·425 inches on 149 days, compared with 18·070 inches on 124 days, in the same period of 1901, 24·394 inches on 156 days in 1900, 20·948 inches on 138 days in 1899, only 10·968 inches on 112 days in 1887, and a thirty-five years' average of 19·880 inches on 145 days.

Mr. Robert O'Brien Furlong, C.B., reports that at Cloneevin, Killiney, Co. Dublin, the rainfall in August, 1902, was 2·31 inches on 15 days, the maximum being 1·02 inches on the 6th. The average August rainfall in the seventeen years, 1885–1901, was 3·202 inches on 16·7 days. In September, 1902, the rainfall at this station was 4·18 inches on 13 days, 2·81 inches being measured on the 2nd. This is the largest amount as yet measured at that station in 24 hours, the next being 2·06 inches on November 23, 1898. The average rainfall in September in the seventeen years, 1885–1901, was

1·936 inches on 13 days. Since January, 1902, the rainfall at Cloneevin equals 23·39 inches on 139 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall was 3·995 inches on 12 days, compared with 5·420 inches on 19 days in September, 1901, and only ·695 inch on but 4 days in September, 1900. The heaviest fall in 24 hours was 2·930 inches on the 2nd. At Knockdolian the rainfall since January 1st, 1902, has been 27·156 inches on 123 days, compared with 25·105 inches on 119 days in 1901, 30·021 inches on 140 days in 1900, 28·440 inches on 139 days in 1899, and 19·688 inches on 124 days in 1898.

Dr. B. H. Steede reports that at the National Hospital for Consumption, Newcastle, Co. Wicklow, rain fell in measurable quantity on 14 days to the large amount of 3·807 inches, compared with 5·107 inches on 21 days in September, 1901, only ·904 inch on but 6 days in 1900, 2·411 inches on 12 days in 1899, 1·991 inches on 13 days in 1898, and 3·166 inches on 11 days in the same month of 1897. The maximal fall in 24 hours was 2·370 inches on the 2nd. Since January 1, 1902, the rainfall at this Second Order Station has been 26·165 inches on 136 days, compared with 21·753 inches on 121 days in 1901, 25·048 inches on 136 days in 1900, and 26·159 inches on 129 days in 1899. The highest temperature in the screen was 65·3° on the 26th; the lowest was 41·2° on the 18th.

Dr. Arthur S. Goff returns the rainfall at Lynton, Dundrum, Co. Dublin, at 4·09 inches on 19 days, compared with 5·03 inches on 18 days in September, 1901. The greatest daily fall was 2·24 inches on the 2nd. The mean temperature in the shade was 56·0°. The screened thermometers rose to 68° on the 9th, and fell to 38° on the 18th.

In the City of Cork the rainfall was 2·02 inches on 14 days, or 0·52 inch below the average for September. The rainfall was greatest on the 2nd, when 0·59 inch was measured. In the 9 months ended September 30, the rainfall was 24·40 inches, or 2·09 inches below the average.

At the Ordnance Survey Office, Phœnix Park, Dublin, 2·635 inches fell in September on 16 days, the maximal fall in 24 hours being 1·640 inches on the 2nd.

Dr. J. Byrne Power, F. R. Met. Soc., Superintendent Medical Officer of Health, Kingstown, Co. Dublin, reports that the mean temperature at that health resort was 56·5°, being 1·8° below the average for September during the previous four years, the extremes being—highest, 68·5° on the 7th; lowest, 42·0° on the 13th.

At Bournemouth the mean was 58·1°, being 1·3° below the average for September during the previous four years; the extremes were—highest, 72·0° on the 9th; lowest, 42·0° on the 18th. The mean daily range of temperature was 12·0° at Kingstown, whereas at Bournemouth it was 14·9°. The mean sea temperature at Sandycove bathing place was 58·0°. The mean height of the barometer was 30·068 inches (corrected). The mean humidity of the air was 81 per cent. The rainfall amounted to 4·23 inches; that for the 24 hours ending 9 a.m. on the 3rd amounted to 2·83 inches, and exceeds by 0·66 inch the average for the entire month of September during 12 previous years (1873–1880 and 1898–1901). The rainfall at Bournemouth amounted to 1·47 inches. The total duration of bright sunshine was 122·7 hours, whereas it was 136·9 hours at the Ordnance Survey Office, Phœnix Park, 167·9 hours at Valentia, 146·6 hours at Parsonstown, 139·8 hours at Southport, and 159·6 hours at Eastbourne.

A NUTRITIVE LEMONADE FOR FEBRILE AND WASTING DISEASES.

THE patient who is confined to liquid diet is dependent on a limited number of articles. R. W. Leftwich, in an abstract in *Merck's Archives*, states that in such cases milk, beef-tea, whey, barley water, and lemonade comprise about the entire bill of fare. Some of these preparations have little nutritive value, while the patient soon grows tired of milk. He therefore suggests a white-of-egg lemonade, which is best prepared in the following manner:—Two lemons, the whites of two eggs, one pint of boiling water, loaf sugar to taste. The lemons must be peeled twice, the yellow rind being used while the white layer is rejected. Place the sliced lemon and the yellow peel in a quart jug, with two lumps of sugar. Pour on them the boiling water, and stir occasionally. When cooled to about the ordinary temperature of tea, strain off the lemons. When the lemonade is in full agitation by whipping, add slowly the white of egg, and continue the whipping for two or three minutes. While still warm, strain through muslin. Serve when cold. The white of egg imparts a blandness which makes the addition of sugar almost unnecessary, and this absence of sweetness is greatly appreciated by the feverish patients. This lemonade is a most excellent drink throughout the course of typhoid fever. It, however, would probably be contraindicated in Bright's disease and in gastric ulcer.—*Journal of the American Medical Association*, Aug. 9, 1902.

PERISCOPE.

THE ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

THE election of Professor A. V. Macan to the Presidency of the Royal College of Physicians of Ireland will be hailed with satisfaction throughout the obstetrical and gynæcological world in general, of which he has been for many years one of the most prominent members. Professor Macan graduated in the University of Dublin in 1868. In 1877 he was elected a Fellow of the College, of which he is now the titular head. In 1882 he became Master of the well-known Rotunda Hospital, where he firmly established his reputation as one of the foremost gynæcologists of the day. On his leaving the Rotunda Hospital he was appointed to the chair of King's Professor of Midwifery in the School of Physic of Trinity College, Dublin, a post which he still holds. He is an ex-President of the British Gynæcological Society and of the Obstetrical Section of the Royal Academy of Medicine in Ireland, a post to which he has been twice elected, and was also honorary president of the Obstetrical Section of the International Medical Congress held at Berlin in 1890. Though not a prolific writer, the new President has contributed many communications of extreme importance to medical literature, and was notably responsible for the introduction into these countries of rational ideas on the subjects of uterine displacements. It is now some years since the post of President of the College was held by an obstetrician and gynæcologist, although many such have been conspicuous Presidents in the past. To their list the name of the newly-elected President is a worthy addition, and one on which we can congratulate the College.—*The Medical Press*, Oct. 22, 1902.

THE SANATORIUM TREATMENT OF CONSUMPTION.

THE large sanatoria which are being erected at Woodilee and Gartloch, near Glasgow, for the treatment of consumptive patients in these asylums are now almost complete. These buildings have been designed and erected by Messrs. Speirs & Co., Glasgow, on their patented system of construction, which it is claimed make iron and wood buildings equally comfortable and durable as stone erections.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. XIX.—*Unreduced Subclavicular Dislocation of the Head of the Humerus.*[a] By EDWARD H. BENNETT, M.D., F.R.C.S.I.; Professor of Surgery in the University of Dublin; Surgeon to Sir Patrick Dun's Hospital, Dublin.

I SUBMIT to the Academy a dissection of a shoulder-joint deformed by old unreduced dislocation of the head of the humerus, and with it a cast of the limb taken before its dissection. Of the life-history of the case I know nothing, and speculations as to the reason for its having escaped reduction are useless. The body was that of an aged female. A view of the specimen and of the cast makes it evident that the dislocation is to be named "subclavicular." The upper extremity of the humerus is seen to be placed directly beneath the clavicle, and to be remote alike from the glenoid cavity of the scapula and the coracoid process. The cast shows also a feature of the deformity of the limb characteristic of the subclavicular dislocation, as contrasted with the intra-coracoid and other forms of antero-internal dislocations.

The limb lies in contact with the side of the thorax; to use the description of Malgaigne, "the arm is generally glued against the trunk." We can, in the cast, see this attitude of

[a] Read before the Section of Pathology in the Royal Academy of Medicine in Ireland, on Friday, November 7th, 1902. [The discussion on this paper will be found at page 460.]

the limb, and the bearing of the tumour formed by the head of the bone. Looking at these relations of the parts chiefly involved in the dislocation, one is forced to the conclusion that when the dislocation occurred the whole, or nearly the whole, of the capsular ligament of the shoulder was ruptured, or stripped from its attachment to the bone around the glenoid portion of the scapula, necessarily most completely on the outer side of the joint.

The specimen shows that the head of the humerus passed into the bottom of the sub-scapular fossa, pushing before it, and to the inside, the sub-scapular muscle, which, with its tendon, is entire. Before the dissection had disclosed these parts, it was only evident that the dislocated head of the humerus could not be felt in the axilla, nor probably through its wall. The long head of the biceps muscle was torn by the dislocated humerus, and is adherent to the bicipital groove. I obtained this specimen in July, 1900, and it lay by me undissected for a time. In the spring and summer of 1899 I met two cases of dislocation in the living, which agree in all particulars with it, so far as one can trace the similarity between the living and the dissected specimen. I should say that before 1881 I had been well experienced in the reduction of shoulder dislocation by the method of the heel in the axilla. I knew that to succeed by that method in difficult cases it was necessary to bring the heel, carried into the armpit, into contact with the displaced head of the humerus, and to use it as a fulcrum on which to lever the dislocated bone into its place. I may now mention that in attempting this movement I could not reach the head of the bone in either of the cases I am recording, nor, indeed, could I pass the heel at all upwards into the armpit. The arm glued to the side absolutely prevented this.

After I had heard Kocher, at the International Congress in 1881, describe his method of manipulation in treatment of shoulder dislocations, I applied it here with invariable success in reducible antero-internal dislocations, until I met the two cases I now submit. I did not, of course, apply it to posterior dislocations, for which it is manifestly unsuitable, of which I met in the time two cases.

The first of the cases I would now record was that of a

powerful man, over six feet in height—a gentleman constantly engaged in active country life. He was mounted on a young horse, going to a meet of hounds, when someone handed him a paper. To read this he let his reins loose on the horse's neck, and as he read the wind fluttered the paper, and the horse made a sudden plunge, throwing his rider heavily on the shoulder. Being near surgical help, he almost at once was placed under treatment by a very able and experienced surgeon, who got to help him three or four of the Royal Irish Constabulary, whose barrack was at hand. The attempt failed, and the patient telegraphed to me to meet him at one of the private hospitals that evening. I found that the dislocated limb presented the feature of an arm glued to the side, and that I could not reach the humeral head in the axilla with my fingers, while the tumour beneath the clavicle was distinct, though masked by powerful muscles. I tried the movements of Kocher's method, and failed. I determined, as the patient had a bad few hours both with his fall, the attempt at reduction tried in force, and his railway journey, that I had better let him rest the night, and be ready in the morning to take an anæsthetic, and I could have with me sufficient assistance. In the morning I found that Kocher's movements again failed, and the failure was repeated when ether was fully given. I then tried the heel in the axilla, but do my best I could not reach the head of the bone, nor could I by traction bring it down to meet my heel. I then changed the method, making traction, against efficient counter-extension, on the arm abducted downwards and outwards, with laces fast to the wrist and above the elbow-joint; by alternate rotation back and forwards, while I kept up the strain on the limb, I made it move with what is best described as a screwing movement, which ended in a few minutes in a complete reduction

The next case is of the same kind. The patient was a man over six feet in height, who had, in his youth, been a great athlete; he is now past middle life. I approached the case with misgivings. Already five weeks had elapsed since the occurrence of the injury—a heavy fall on the shoulder, and already five attempts had been made at reduction under anæsthesia, and with four or five surgeons present each time,

without any signs of reduction appearing. The features of the injury were the same as I have just now put before you—a tumour under the clavicle well to the inside of the coracoid process, an arm glued to the side, and the axilla closed by the shaft of the humerus, which prevented the hand or the heel from reaching the head of the bone. When I had the patient fully under ether, I tried Kocher's movements, without result, except that probably the head of the humerus was somewhat freed from adhesions. I tried the heel in the axilla, as in the last case, and because I had been so familiar with the method. I could not enter the axilla at all with my heel. I then tried the extension on the arm extended downwards and backwards. I found on making the screwing movements, as before, that the head of the bone came down, and was slowly reduced into the joint. I confess that the result astonished me. I believe that the head of the humerus could not get inwards to the distance at which it lies in the specimen without a great rupture of the capsule, first on the inside of the joint, through which the bone escapes and passes beneath the sub-scapularis, and again by the tearing away of the outside of the structure to permit the bone to take its new position. We see in this dislocation that the bone passes right away from the glenoid process of the scapula. In the other antero-internal dislocations the humerus rests by its groove between the head and great tuberosity on the glenoid border. The varieties of these lesions depend on the height or lowness of the contact between the bones in this groove and on the degree of rotation enforced on the shaft of the bone by the extent of untorn capsular ligament.

Looking at a model in which the parts of the ligaments are taken by elastic cord and membrane, we can see the reason why Kocher's proceeding fails, there being no structure left to act in maintaining the tension between the glenoid border and the humeral groove. Farabeuf's experiments demonstrate this point also, for if the external parts of the capsule be divided, the leverage necessary to the production of Kocher's reduction fails.

ART. XX.—*The Prophylactic Treatment of Enteric Fever by Inoculation.* By WALTER C. STEVENSON, M.D., B.Ch., B.A.O., D.P.H., B.A. Univ. Dubl.; Lieutenant, Royal Army Medical Corps, Royal Infirmary, Phœnix Park, Dublin.

THE subject of the prophylactic treatment of enteric fever by the inoculation of a vaccine consisting of dead typhoid bacilli and their toxins was first treated in the *British Medical Journal*, January 30th, 1897, in an article by Prof. Wright, of Netley, and Surgeon-Major Semple, A.M.S.

From time to time articles from the pen of Prof. Wright and others have since appeared on the method and its development. A short *résumé* of the *rationale* of the method will be of interest to those who have not been able to follow the steps by which Prof. Wright gradually advanced our knowledge of the mode of treatment proposed by him.

It is observed that when the human subject has been prostrated about a week with enteric fever certain conditions exist:—1. His spleen is enlarged. 2. The characteristic typhoid spots are present on the patient's abdomen. 3. When his blood is tested for Widal's reaction it is found to clump typhoid bacteria.

The bacteriological course of events seems to be somewhat as follows:—

The typhoid bacillus is swallowed in milk or in water, or in some manner finds its way into the intestines. By attacking Peyer's patches, and setting up inflammation there, and finally by the lymph stream, the bacilli enter the blood in considerable numbers. Now they find themselves in a very unsuitable medium in which to thrive, as the blood normally possesses a strong bactericidal and agglutinating power for this particular organism. In the blood stream the toxins are washed off the bacteria, and their feeble condition is testified by the loss in their staining power.

Human blood serum is capable of agglutinating and killing a certain number of typhoid bacilli, which fact can easily be shown experimentally. If the serum, having destroyed its full complement of bacilli, is strained away from them, it will be found incapable of harming any further quantity of

enteric germs. It is, in fact, as if a definite chemical compound is formed by the protoplasm of the bacterium and the bactericidal and agglutinating substances in the blood.

There is a distinction between the agglutinating and bactericidal properties of the blood, as was demonstrated by the "Berne Serum," which had been put on the market for the treatment of enteric. It was found that when this was added experimentally to the blood, although it increased agglutination, yet it destroyed the bactericidal power of the blood—not a very desirable result.

Using Ehrlich's conception of protoplasm, and, by way of simile, mentally representing it as a benzene (C_6 H_6) group, or molecule, we perceive that the bactericidal substance of the blood attacks the vital ring of the protoplasm of a bacterium (C_6 in C_6 H_6), tearing it asunder and destroying its existence as a definite compound and radicle, while the agglutinating substance combines with the less vital side-chains of the group (H_6 in C_6 H_6). The side-chains in protoplasm function by uniting with food stuffs.

Bactericidal substances kill the bacteria, while the agglutinins act principally on their capsules, causing agglutination, immobilisation, spherulation, and sedimentation of the bacilli.

Finally, agglutination is measured by the Widal reaction, or Prof. Wright's sedementation test[a]; while Prof. Wright estimates the bactericidal power[b] by finding what relative volume of blood will render sterile a volume of 24-hours' old broth culture of typhoid bacilli. The result is given as the number of typhoid bacilli one cubic millimetre of blood will kill.

In the *Lancet*, July 5th, 1902, a particularly quick and easy method of counting bacteria is described by Prof. Wright. It consists of making a film cover-glass preparation of a mixture of, for instance, one volume of a 24-hours' typhoid broth culture, and an equal volume of a five-fold dilution of blood. The number of red blood corpuscles and of bacteria are counted separately in one or more fields. If the number of red corpuscles present represent red blood corpuscles at

[a] British Medical Journal, Jan. 16th, 1897.

[b] Lancet, Dec. 1st, 1900; March 2nd, June 1st, 1901.

the rate of one-fifth of 5,000,000 per cubic millimetre (5,000,000 being the number normally in one cubic millimetre of blood), the number of bacteria per cubic millimetre can easily be estimated.

For convenience, agglutination and the bactericidal power of the blood may be classed as its "bacteriotropic" properties.

Typhoid bacilli having therefore gained entrance into the blood by some means, they are carried round in the circulation till a number of them are finally caught alive in the meshwork of the spleen. But, as already stated, the bacilli cannot live in the unchanged fluids which bathe this organ; and it must be that only those bacteria which happen to be situated in limited areas in the spleen where bacteriotropic substances are diminished, or not present, that can thrive and form colonies.

Two factors probably combine in forming these localities. Firstly, the blood and lymph stream is slowed down, and then partially or completely shut off from the area of the colony, which area must of necessity be very small. Secondly, the bacteriotropic substances combining chemically with the outlying bacteria, the injurious properties of the blood or lymph are diminished for those lying in the distal part of the colony, where growth is most vigorous. The spleen is consequently enlarged and congested, due to the irritation of the microscopic miliary colonies scattered through it.

The fact that the bactericidal power of the blood permeating these colonies is diminished is capable of demonstration. If a piece of spleen is taken which must contain several colonies, or, better, the blood from a typhoid spot which is a single colony, and this is compared with the blood from the finger, it is found that the latter blood still kills typhoid germs, while in the former typhoid bacilli are comparatively uninjured.

The bacilli having once started to grow in the spleen they commence to send their toxins into the blood current. The first effect is that the toxins combine with the bacteriotropic substances normally in the blood, and before the tissues have time to react sufficiently the bactericidal power of the blood is lowered—that is, a "negative phase" of immunity is induced in the body. It is now probable that some bacilli find an

opportunity of disseminating through the system with comparative impunity, and subsequently they grow to colonies, as the miliary colonies found in the small intestine and the typhoid rash. Possibly, the reason why the colonies are seen on the abdomen particularly is on account of the thinness of the skin there, and the good superficial blood supply of this region owing to its protected position.

Soon, however, the stimulation of the toxins in the blood acting on the tissues causes an outpouring of antitoxins, or antibacterial substances, and thus the bactericidal and agglutinating properties of the blood increase considerably above normal—that is, a "positive phase" of bacteriotropic power is reached. This explains the Widal reaction in the blood serum of an enteric patient when the disease is well established, causing the clumping and death of typhoid bacilli, even with high dilutions of the serum.

A struggle ensues now between the toxins and bacteria on the one hand, and the bacteriotropic substances formed by the body on the other. If the agglutinating and bactericidal power continue high in the blood, prognosis is favourable; while if they fall and remain very low, prognosis is grave. If there are no complications convalescence results when the body cells have produced sufficient bacteriotropic substances to neutralise the toxins produced and to kill the bacteria. In most favourable cases the system responds well to the toxic stimulation, and the patient commences life again with his bactericidal and agglutinating powers increased—that is, his body presents a highly unfavourable medium for enteric germs to develop in. If, on the other hand, as sometimes happens, the response of the body has only just been sufficient to kill the typhoid bacilli, there may be little or no bacteriotropic elements left in the system, and the patient will be less able to resist enteric than previous to his illness. Several patients who had been invalided home from S. Africa after enteric have gone out again and succumbed to that disease.

Now, if with safety and facility an individual can be placed in the condition of one who has convalesced from an attack of typhoid fever with his powers of resisting it greatly increased, the object of introducing a prophylactic treatment of enteric will have been achieved. This immunity is brought

about during the course of the disease, as we have seen by the stimulation of the toxins of the typhoid bacilli, causing the production of a condition antagonistic to the germs of that disease. It is easy to obtain for the purpose of this treatment typhoid toxins, seeing that a broth culture must abound in them. All that is necessary, therefore, is a broth culture which has been sterilised by heating up to 60° C., which kills the typhoid bacilli, but does not affect its toxins. A certain quantity of carbolic acid is then added to the broth, and its sterility is tested by the absence of growth when nutrient media are inoculated with it. The culture is standardised and sent out in capsules for single administrations, or bottles with several doses. Usually the dose is 1 cc. for the first injection, and 1½ to 2 cc. for the second. The method of administration is by a sterile hypodermic needle, the fluid being injected into any part of the body, preferably where the tissues are lax, as in front of the axilla or in the skin of the abdomen.

At first, in this treatment, one large dose of typhoid vaccine was used. It was then found that the bactericidal power was decreased for a considerable time, as long as a fortnight or three weeks—that is, the "negative phase" of immunity was prolonged. This was gradually followed by the "positive phase" with increased bactericidal power. This prolonged negative phase is not a desirable circumstance, as during that period the individual is somewhat in the condition of the patient who recovers from enteric fever with his power of resisting a subsequent attack impaired. This result was obviated by giving an initial small dose when there is a very short or no "negative phase;" for if the blood be tested the day following inoculation the bactericidal power will have been already raised. When after ten days a larger dose is administered, a still greater bactericidal power will be gained, usually a short "negative phase" intervening.

The symptoms produced by this treatment are trivial. Of 70 cases of inoculation carried out by the present writer on board ship only one patient took to bed, for one day and a half. His evening temperature was 101° F., and was 99° the following morning. In another case it caused vomiting about three hours after inoculation. The symptoms were

mostly local. Two hours after the injection the muscles in the region of the wound were stiff, and painful on movement. This sensation was at its worst the following morning, and subsided slightly during the day. On the fourth morning most of the stiffness had disappeared. On the second inoculation local symptoms were little marked, but a feeling of malaise was experienced for a couple of days.

The immunity brought about by typhoid vaccine seems to be similar but more certain than that produced by long residence in a locality where enteric fever is endemic. Fresh arrivals in such a place are more likely to contract the disease than those who have been exposed for some time. Some of Prof. Wright's assistants, though they have never been inoculated by him, have an abnormally high degree of immunity against enteric, due to their constant work in the laboratory.

Inoculation does not absolutely prevent the disease, but statistics show that the percentage of cases among those who have been so treated is very considerably less than among those who have not, though all were equally exposed.

In conclusion, it is reasonable to expect, and ascertained facts as far as they go prove, that this system of treatment is a satisfactory one for the prophylaxis of enteric fever. But, as pointed out above, discretion is necessary in practising it in the presence of an epidemic where an overdose of vaccine would for a short period lower the power of resisting this disease.

ART. XXI.—*Errors in Diagnosis, Avoidable and Unavoidable.*[a] By ALFRED PENNY, L.R.C.P.I., L.R.C.S.I.

I HAVE no new treatments or remarkable or interesting cases to bring before your notice. On the contrary, I fear you will find this paper dull and uninteresting. It is a record of failures; of things done which ought not to have been done, and of things undone which ought to have been done. About twenty-two years ago the late Mr. Ernest Hart, the then editor of the *British Medical Journal*, made an entirely new departure in his management of that

[a] An Address read before the Chelsea Clinical Society, 1902.

influential paper. He opened a column in the Journal under the title of "The Confessional," and invited the members of the Association to confess their sins of diagnosis, prognosis, and treatment. He further assured intending contributors that his attitude towards them would be that of a medical priest. He promised not to publish their names and strictly and honourably to respect their confidences. Here was an opportunity for many an over-burdened conscience. The response Mr. Hart assumed would be immediate and overwhelming. But what was the real result? Five sinners, and five only, confessed their faults after the door of the Confessional was opened to the medical public. One of these five—a personal friend of my own—had a sad and instructive tale to pour into the sympathetic ear of the Editor-Confessor. Remember that my friend was very young and very inexperienced when one day he found himself resident medical officer of a large provincial hospital, with full charge over the various special departments at which out-patients attended suffering from throat, ear, eye, and other maladies. One of the first patients who presented herself at the gynæcological department was a young woman, whose symptoms I need not go into. He, however, did most thoroughly, and armed with a Fergusson's speculum, and after much labour and vain searchings, at length brought the cervix uteri into full view. Of this feat he was rather proud, having never before had an opportunity of trying to do so. In fact, except in a book, and an occasional hurried glimpse whilst attending his clinical classes, he had never before even seen this interesting structure. But although his previous practical acquaintance, from the medical standpoint, with the cervix uteri had been remarkably limited, he was thoroughly acquainted with its pathological aspects in theory, having read the standard text-books on the subject. And from the knowledge he had thus acquired he came to the conclusion that the condition revealed by the speculum's aid indicated the presence of an ulcer on the cervical margin. The diagnosis thus made, the only remaining thing to be done was the treatment. And here, once more relying upon his book knowledge, he promptly applied nitrate of silver to the affected part, and

having so done, he withdrew the speculum and told his patient to come back in a week's time. She did not return. He could not understand it. At length, after three weeks' absence, she appeared once more in the out-patients' department. My friend was very angry, but, subduing his wrath, asked her how she was. "Oh, quite well now, doctor, and thank you for all your kindness in doing so much for me. I hadn't been more than five minutes in the house when the miscarriage came on."

My friend has since retired from practice, a successful man. That case, illustrating as it does some of the many important points to be found in actual practice, but not to be found in books, taught him much.

Avoidable errors in diagnosis may arise from :—

1. A positive lack of knowledge on the part of the practitioner of the particular complaint the patient is suffering from.

2. A hasty and inefficient examination of the patient when a more prolonged and careful examination would reveal the true state of affairs.

3. Directing too much attention to symptoms, and too little attention to physical signs, and *vice versâ*.

4. Neglecting to use the different instruments of precision—*e.g.*, the laryngoscope, the stethoscope, and the thermometer, or employing them with insufficient knowledge and experience.

5. Failing to come to the point—*i.e.*, drawing a wrong conclusion from correct premisses.

6. Diagnosticating the disease, but not the patient.

I firmly believe that the majority of avoidable errors in diagnosis are due to hurried and incomplete examinations of patients. A man is very apt, especially if he is in busy practice, to dismiss a patient with a prescription after making a few inquiries. Perhaps he has five or six patients in his waiting room; has indulged in an extra half-hour's sleep that morning; has a long list of visits that day, and is in a hurry to get out. So the usual routine is followed of looking at the tongue, feeling the pulse, and inquiring as to the state of the bowels.

This is a thing that rapidly grows, and if not checked

develops into a habit, and then one gets into a rut. The gentle rub-dub of the heart sounds and the respiratory breezes are no longer heard, or if heard are no longer appreciated. The only specimen of the urine one ever inspects is one's own. The abdomen is an unexplored region, and the larynx and the fundus oculi are far in the depths of a Darkest Africa, into which no medical Burton, Stanley, or Johnston is inclined to penetrate. Then comes the arm-chair, the cosy fireside, and the motto "Cui Bono."

Some years ago a patient came to me complaining of symptoms which pointed to flatulent dyspepsia as the proximate cause of her trouble. I had really no doubt about the nature of the case, and treated it accordingly. She did not improve under treatment. One day I asked her to allow me thoroughly to overhaul her. On examining her abdomen I found that her spleen extended almost as far as the crest of the ilium, and the cervical axillary and mesenteric glands were enlarged. In addition, she had advanced aortic disease, and she died about a year later from leucocythæmia.

It is easy to make a mistake of this sort, but it is quite a different matter when your patient seeks other advice and finds that your diagnosis was wrong. You then get the credit of being an "ignoramus," and not only lose that particular patient, but perhaps many more, who, in course of time, will be certain to hear about your incompetency. Believe me, the public are not so foolish about medical matters as we usually credit them with being. Good work tells in the long run, and good work means constant study and the acquisition of that living knowledge such as one gets at a post-graduate Hospital under the supervision of men who are the exponents of all that is best and most advanced in their own special lines.

When a man is settled in practice he gets out of his difficulties by one of two methods. He seeks in his books for fresh information, or he sends for a consultant to solve the riddle for him. Books are all very well in their way, but book knowledge is not living knowledge. A man may lose a few patients occasionally if he attends a post-graduate Hospital, but the enlarged experience and the wider grasp of

his work he gets there more than compensate for these, and his patients think all the better of him because he tries to keep abreast of the times.

I believe we are indebted to Mr. Mark Twain for the saying, "When in doubt tell the truth." Now it is sometimes a painful process to tell the truth, especially when the truth means an avowal of one's ignorance. If you thoroughly examine a patient, using all your different instruments of precision—the laryngoscope, the stethoscope, nasal and aural specula, and other aids to diagnosis, in nine cases out of ten you will eliminate any element of doubt, and in many cases detect conditions that have never been suspected.

I will give an illustration of what I mean. A patient comes to you complaining of a troublesome cough. You examine his lungs, larynx, throat and nose, and find nothing abnormal. You prescribe different sedatives, all to no purpose. You confer with a consultant. He reads your notes, opens a drawer, takes out an aural speculum, examines both ears, syringes, out comes a plug of wax, the cough disappears, and the patient departs very much impressed by the consultant's skill and by your ignorance. You go home, and if you are a wise man you purchase a set of aural specula, if you have not already got them, and keep them in your waistcoat pocket, or under your pillow, if need be, as a constant reminder of your forgetfulness.

I think it is a good plan in every case to feel both radial pulses instead of confining your attention to one only. I am now firmly convinced of the importance of doing this. Two years ago I was not, and as a result I failed to detect an aortic aneurysm in a patient. He very kindly permitted me to treat him for a complaint he had not got until pressure-symptoms supervened and opened my eyes to the true state of affairs, and then I found that there was no pulsation in his right radial artery.

All successful diagnosticians possess what may be called the synthetical as well as the analytical faculty. The possession of this faculty—what is commonly called the capacity of "coming to the point," is a most valuable one, and no amount of training will bring it out if a man has

not got it in him. Many men are born without it. I have seen many general practitioners, and not a few consulting physicians as well, wandering about in quagmires of symptoms and physical signs, their case books crammed with copious notes, taken with infinite pains at the expenditure of much time, ink, and paper, who despite all this could not put two and two together and recognise an elephantine fact staring them in the face.

Some years ago a gentleman with whom I was acquainted fell off his bicycle. He was run over by a car following in his wake, and sustained very serious internal injuries, as the cartwheel passed over his chest. For some time his life was despaired of, but he ultimately recovered. About a year after the accident he complained of severe pain in the chest of a gnawing character. This pain was diagnosticated by an eminent surgeon, who was attending him, to be due to muscular rheumatism, and this opinion was confirmed by another equally eminent surgeon. I naturally took a great interest in the case, and when I heard about the new development I put the cartwheel and the pain in the same basket, and timidly suggested to a mutual friend that very possibly this was a case of thoracic aneurysm of traumatic origin. It proved unfortunately to be so, and from this cause my friend died some seven months later. The abdominal cavity is the region of surprises and surmises. It is like a sealed envelope. You can never tell what is in it until you have opened it—*i.e.*, what pathological condition you may find. Even what are supposed to be the most plain-sailing cases turn out to be quite at variance with the facts sometimes. With this ever-present element of uncertainty, therefore, it is not surprising that the abdomen should present difficulties, from a clinical point of view, and thus justify one in saying that diagnostic errors in abdominal cases may be placed under the heading of Unavoidable Errors in Diagnosis. Take the case of that very get-at-able organ, the uterus, and consider the many instances within one's own personal knowledge where pregnancy has been overlooked, or where some other condition has been mistaken for it. It is most important to bear in mind the possibility of pregnancy in all kinds of obscure

abdominal swellings in women, more especially when an abdominal section is contemplated; otherwise serious consequences may ensue. I can distinctly recall to mind a case of this sort, not many years ago, where a surgeon, and a very distinguished one, too, nearly ruined his reputation by forcing a Spencer Wells' trochar through the head of a child *in utero*. How frequently, too, is a uterine polypus mistaken for pregnancy.

Early this year I was consulted by a gentleman suffering from hæmaturia, but he had no other symptoms or previous history to guide me in forming a diagnosis. Much against my wish I kept him under treatment for several months, but with little or no improvement. I was quite at sea as to the seat of the hæmorrhage, which was certainly not urethral. I showed my notes to a well-known specialist. After having read them he said, "The mischief, whatever it is, is not in the kidney. In all probability it is a villous growth in the bladder." It was not. On using the cystoscope he said he saw blood spurting from the right ureter. He concluded, therefore, that he had to deal with a right renal calculus. The patient consented to an operation. Before operating, however, he was cystoscoped again with a better light, and the blood was seen coming from the left ureter. The surgeon cut down upon the left kidney and explored it. The kidney was healthy but displaced, and there was a slight twist in the ureter. The displacement was rectified, and the wound closed. The patient had profuse hæmaturia for three or four days afterwards, but the urine gradually cleared, and an excellent recovery was made. He was very much puzzled to find after the operation that his left and not his right kidney had been operated on. His relations assured me that a serious mistake had been made, as we had told them at the time that the trouble was in the right kidney and not in the left.

Two physicians who lived and practised in the early part of the eighteenth century had a slight difference of opinion at the bedside of a patient as to the particular organ at fault. The patient took a deep personal interest in the matter. Dr. A. stated that in his opinion the liver was the

Fons et origo mali. Dr. B. staked his reputation on the heart. Dr. A. retorted, "Well, sir, wait until the *post-mortem;* wait until the *post-mortem.*"

We seldom wait for the *post-mortem* now-a-days. We anticipate it. If a patient must die, and if he has the will and the means to place at his own disposal all the skill and all the help that modern medicine and surgery can afford him, he and his friends can at least have the satisfaction of knowing that although the disease triumphed its real nature was recognised before death closed the scene.

ART. XXII.—*Mouth-Washes and the Integrity of the Teeth.* By W. H. TRICK, L.D.S. Eng.

SCIENTIFIC dentists long since set their faces against the tendency on the part of the public to attach an exaggerated importance to tooth powders and tooth pastes as means of cleansing the teeth. It is obvious that these applications exert their detergent effects only on the visible, external surfaces of the teeth, leaving untouched, or at any rate untreated, any carious areas that may be present. The objections urged against these preparations, moreover, are not based solely upon their inutility. Many specimens of tooth powders on the market contain crystalline fragments of hard, resisting nature, which, in the long run, wear away the enamel to a greater or less extent. In consequence of this great drawback, tooth powders have of late been abandoned in favour of liquid dentifrices, using the tooth brush as the mechanical means of cleansing.

This question is by no means trivial, for upon the employment of effectual and innocent dentifrices depends in great measure the dental future of the individual. The necessity for the routine use of a really antiseptic mouth-wash has been established in an irrefragable manner by Miller and others, and in proportion to the general acceptance of the view that dental caries is not a simple chemical process, antiseptic dentistry has tended to prevail. When the presence of micro-organisms in decaying teeth was first demonstrated, their presence was regarded as secondary to the initial caries—

that is to say, their *rôle* was thought to be that of scavengers engaged in devouring decomposing animal matter. It is hardly necessary at present to point out that caries results from the microbial action, the acid products elaborated by these organisms attacking the teeth and exposing the dentine to their disintegrating action. The tooth is deprived of part of its lime constituents by this microbial action, and is thereby structurally weakened.

Although the chemical destruction of teeth in caries is practically identical with that caused by acids, it is a common thing to meet with dentifrices which have a distinctly acid reaction. Among a large number with which I have made myself acquainted I have met with weak solutions of corrosive sublimate, cream of tartar, salicylic acid, in aqueous and alcoholic solution, alum, boric acid, thymol and carbolic acid. These were tested in the usual way by placing teeth in their solutions, at an ordinary temperature, for several days, and then testing for phosphoric acid and lime. The diluted solutions of sublimate gave the weakest reaction, this salt undergoing decomposition with the liberation of free acid only with difficulty. Nevertheless the reaction in Miller's hands was invariably positive. Alum, as might be expected, gave well-marked reactions, since it breaks up readily enough into free acid and basic sulphate. Even carbolic acid was shown to possess the power of dissolving lime salts out of healthy dentine, even in the weak solutions in which this drug is employed for tooth-cleansing purposes. Daily experience indeed has taught the general public that the methodical use of strongly acid articles of diet, or the continouus use of acid medicines, exert a deleterious action on the teeth. It follows that a mouth-wash intended for constant use must, first of all, be free from acid.

The epoch-making researches of Miller and Röse, devoted to the investigation of questions connected with the presence of micro-organisms in the mouth, have absolutely demonstrated the necessity of an antiseptic mouth-wash. But the question as to what particular kind of antiseptic should be preferred for habitual use as a mouth-wash is naturally one which has attracted a good deal of attention, manifested in the form of countless varieties of mouth-washes. Obviously

our chief aim must be to secure a strong antiseptic effect, but in seeking to fulfil this indication the maxim *primo non nocere* is often lost sight of.

Let us ask ourselves then what must be regarded as the essential qualities of a perfect mouth-wash. First of all, let me state what it should *not* do. In the first instance, it should *not* be injurious to any of the structures with which it comes into contact. It should *not* attack the teeth, it must *not* set up irritation of the mucous membranes of the buccal cavity, and, moreover, it must not be of a nature calculated to hinder digestion or to deteriorate the general health. It must possess deodorising properties without leaving any objectionable flavour or aroma of its own; and lastly, it must be capable of arresting the fermentative processes and microbial decompositions which underlie all carious processes.

It follows that an ideal mouth-wash must be non-poisonous and unirritating; it must be neutral in reaction—that is to say, neither acid nor alkaline, the alkalies attacking the organic constituents of the teeth, and the acids disintegrating the mineral constituents. Lastly, it must be deodorising, refreshing, and antiseptic. All mouth-washes which do not comply with these indications must be described as objectionable. The principal indication, however, is certainly the presence of a trustworthy antiseptic constituent otherwise unobjectionable.

Subjected to these tests it is surprising how few, if indeed any (with one exception), of the mouth-washes and dentifrices in general use would justify our approbation. Indeed I know of only one which, in every respect, conforms to the schedule of requirements which I have sketched, the validity of which no dentist, I imagine, would challenge. That exception is a preparation called "Odol," which, as shown by carefully conducted tests, is non-poisonous, indifferent or neutral, and absolutely unirritating. It exerts a marked antiseptic action, and possesses a refreshing taste and aroma. It would be invidious to institute comparisons with other well-known mouth-washes individually. Comparisons are odious, but it will suffice for me to say that odol alone, among the numerous dentifrices with which I am familiar—and the list comprises all the well-known preparations in the market—possesses to

the full the negative and positive virtues which we are entitled to require in a toilet preparation of this class.

It is a mistake to suppose that it is necessary absolutely to destroy all the micro-organisms which are found in the mouth. This object can be attained only by the use of such bactericidal substances as corrosive sublimate, which, for reasons already set forth, is ineligible. Our object rather must be to arrest fermentation and decomposition, which are the causes of disorders of the teeth and of foul-smelling breath. Now, fermentation and decomposition in the mouth will be arrested if the germs in the mouth are merely prevented from developing and multiplying. This result, which cannot be obtained by the use of mild antiseptics, cannot safely be obtained by the employment of strong antiseptics, which, as already shown, are always injurious to the teeth. Consequently the best mouth-wash is not necessarily the one which contains the strongest antiseptic—that is to say, an agent which produces the most marked effect in the shortest space of time. The test is rather one of endurance—that is to say, the period of time for which a given mouth-wash inhibits fermentation after use.

The very elaborate experiments carried out by Miller showed conclusively that by rinsing the mouth with mild and harmless odol the processes of decomposition and fermentation in the buccal cavity are checked for a longer time than by the use of poisonous and injurious agents such as corrosive sublimate. The explanation of this apparent paradox is that the one antiseptic, odol, is partially retained, while the other is not. The latter consequently exercises its influence only for about half a minute, while odol exercises its influence for a long time, being absorbed by the mucous membrane of the mouth. It may be regarded as an established fact that the effectiveness of an antiseptic depends more upon the length of time during which it exerts its effects than upon its immediate power to destroy bacteria.

Odol, as has been pointed out, is non-poisonous, indifferent, and neutral. It does not attack the teeth, yet has strong deodorising properties and a refreshing taste. Odol, I find, is apparently an alcoholic solution perfumed with oil of peppermint and sweetened with saccharine, of an antiseptic which

has no injurious effects upon the mucous membrane of the mouth or the teeth. On the other hand, it develops a strong antiseptic power which inhibits lactic acid fermentation and greatly hinders yeast fermentation. It further does good service by sterilising fragments of food remaining in the mouth. The secret of the superiority of odol lies in the fact that its antiseptic constituent is partially retained by the mucous membrane of the mouth, while other antiseptics are not.

Odol possesses yet another advantage—viz., that it does not stain the teeth as do many otherwise active dentifrices, especially when the dentine is exposed to their action.

Incidentally, the elegant and convenient shape of the flask in which odol is contained is a detail worthy of note, a detail which cannot fail to commend the use of odol to the general public, although it may not win over the medical critic who tests the preparation, and recommends it on the sole ground "that it is the one and only preparation at present known which is absolutely harmless, and is well suited for the prophylactic preservation of the mouth and teeth."

Odol is remarkably efficacious in removing bad odours and tastes from the mouth, and it is in every respect vastly preferable to any other mouth-wash at present before the public.

EGYPTIAN MEDICAL CONGRESS.

The following gentlemen have kindly consented to join the Committee in England on behalf of the Egyptian Medical Congress, which will be held at Cairo on Dec. 19th–23rd next. Special facilities and reduction in fares are arranged for members wishing to be present at the Congress. Anyone wishing for further information will please apply to any member of the Committee, or to the Hon. Secretary, 9 Manchester-square, London. List of the Committee:—Sir Lauder Brunton, Mr. Watson Cheyne, Sir William Church, Bart., Mr. Reginald Harrison, Sir Victor Horsley, Dr. Stephen Mackenzie, Dr. Page May (Hon. Sec.), Sir Douglas Powell, Bart., Dr. George Savage, Sir Thomas Smith, Bart., Dr. James Taylor, and Sir Frederick Treves, Bart.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

The Report of the Yellow Fever Expedition to Parà of the Liverpool School of Tropical Medicine and Medical Parasitology. By H. E. DURHAM. London: Longmans, Green & Co. 1902. 4to. Pp. 79.

THIS valuable report has been already briefly noticed in our review of the Thompson-Yates Laboratories Report, Vol. IV., Part II., from which it is now separately printed as the seventh Memoir of the Liverpool School of Tropical Medicine. As previously stated, it has a melancholy interest from the fact that both members of the expedition were almost simultaneously attacked by yellow fever, and one of them—Dr. Walter Meyers—died of the disease. The interruption caused by this has interfered in many ways with the completeness of the report, which, however, contains a great deal of interesting and useful matter.

After a brief preface, in which the author acknowledges his obligations to several gentlemen from whom he received assistance in his work, there is a section headed "Preliminary thoughts on the problem of the Etiology of Yellow Fever." In this a sort of programme is laid down of the possibilities of the causation of the disease and the methods of investigation which should be adopted. Then follow the reports. First, the preliminary report, which was published in the *British Medical Journal*, then an abstract of the interim report, the completion of which was prevented by the illness of the author and his colleague.

A fine small bacillus was found in the organs of all the cases (14) examined. It somewhat resembles the influenza bacillus, and in the tissues is about 4 μ in length. It is also present in the large intestine. No other bacillus was found in the organs. It is difficult to stain and to cultivate. This accounts for its importance having been overlooked, although it has probably been seen by three previous ob-

servers. A protozoal parasite could not be found. Doubt is thrown on the man-to-man transference of yellow fever by means of a gnat, as maintained recently by the American Commission.

An examination of the claims of Sanarelli's bacillus, *B. icterodes*, to be the germ of yellow fever leads to the exclusion of this parasite from the ætiology of the disease. As to the recent observations of the agency of mosquitos it is now held that "it may be taken as proved that *Stegomyia fasciata* (Culex) may be capable of transferring the disease some ten, twelve, or more days after having fed upon yellow fever patients during the first, second, or third day of the fever."

From the author's own observations he formulates the following "working hypothesis of the pathology of yellow fever:"—"Supposing the small bacilli found in the typical bites, organs, salivary sacs, and stomachs of the mosquitos and in the intestinal contents were identical in nature, and that they were the acting cause of yellow fever, the following working theory of the fever could be formulated:—At first the subcutaneous introduction of the bacilli by the gnats (which might have derived them from patients or by feeding on other, *e.g.*, fæcal, material); affection of the superficial lymphatic glands (in which case the infection would seem to take place more frequently in the upper than in the lower extremity, as judged by the intensity of the lesions in the glands of the former); generalisation through the system, giving rise to the influenza-like first period of the fever; localisation of the bacilli in and about the intestinal area, resulting in absorption and distribution of toxic products causing the symptoms of the second period of the fever."

The treatment is chiefly hygienic, together with protection from gnats, both to prevent re-infection of the patient and the spread of the disease to others. No prophylactic inoculation has as yet been discovered.

In a separate chapter we find notes on roseolar marks described as "typical bites;" on the conditions of the lymphatic glands, which, particularly in the axilla, are almost always enlarged and congested; on the urine, which con-

tains a soluble form of proteid and tube casts, whose retention in the renal tubes probably plays a large part in the frequently recurring suppression of urine; on the kidneys and other organs in which it is shown that the yellow colour of the blood plasma is not due to the presence of dissolved hæmoglobin.

Notes of cases, including that of the author himself, follow. A chapter is devoted to ague at Parà, and the habits of *S. fasciata*, a day gnat, and *C. fatigans*, a purely night insect.

A long chapter deals with the general health of Parà, and the hygiene of the place, both of which are much in need of improvement.

In the last chapter are "odd notes"—on the parasitic nature of prickly heat, to which we referred in our former notice; on Drepanidium in the toad; and on Trypanosona in the bat, and on blood parasites in some other animals.

A Manual of Bacteriology, Clinical and Applied, with Appendix on Bacterial Remedies, &c. By RICHARD T. HEWLETT, M.D., &c.; Professor of General Pathology and Bacteriology, King's College, London, &c. Second Edition. J. & A. Churchill. 1902.

THIS manual was first published and reviewed by us in 1898. With sincere pleasure we now notice the appearance of its second edition, which has been carefully kept abreast of recent progress, as well as otherwise enlarged and improved. As is needed in the case of a young, vigorous, and progressive branch of science, many sections have been re-written, others re-arranged and enlarged, and such naturally concern subjects upon which literature has accumulated during the period which has elapsed since the appearance of the first edition.

The chapter on "Anti-sera, Anti-toxins and Immunity" shows in an especial degree how keenly this branch of science is being pursued, and how correspondingly interesting and important are its fruits. This chapter contains a compact and intelligible summary of Ehrlich's now famous "side-chain" theory of immunity; and a notice, under the heading of "Precipitins" of Uhlenhuth's method of distinguishing the

bloods of different species of animals. Evidence is accumulating which serves to indicate that this latter will fill a gap until now seriously felt in medico-legal science.

Another section—that dealing with the relations of protozoa to disease—has been very considerably enlarged. We find here, besides descriptions of the tsetse disease of horses, &c., a particularly good and well illustrated account of malarial parasites.

The difficult and still vexed questions of the separation and differentiation of the three groups—typhoid, Gärtner, and colon—of specially intestinal organisms are well dealt with, though upon this subject each day brings with it somewhat new.

Having thus merely indicated a few noteworthy points in this manual, we may say that from the student's standpoint it is an altogether admirable introduction to bacteriology, very successfully blending the characteristics of text-book and laboratory companion. Having constantly used it for four years in the latter capacity, we can speak confidently as to its value. It contains many practical wrinkles found only in the work of one who has acquired his experience at first hand. Within its avowed limits it is, we think, the best as well as the most recent of not a few good text-books upon bacteriology.

Clinical Essays and Lectures. By HOWARD MARSH, F.R.C.S.; Surgeon to, and late Lecturer on Surgery at, St. Bartholomew's Hospital; Consulting Surgeon to the Hospital for Sick Children; President of the Clinical Society of London; Hon. Member of the Medical Society, State of New York. London: J. & A. Churchill. 1902. Pp. 303.

MANY of these essays and lectures have appeared from time to time in the St. Bartholomew's Hospital Reports or Journal, the weekly Medical Journal, and the "Transactions" of the Clinical Society of London. The work is in no sense intended as a handbook. The object of the author is not that of simply giving signs, symptoms and pathology such as are to be found in every handbook. It is rather that of setting forth some of the practical points of information he acquired from his large experience as a hospital surgeon in connection with

the diagnosis of various conditions, their prognosis, and in some cases their treatment. In this he has not hesitated to detail mistakes as well as successes in diagnosis—a matter of the utmost importance for the observant student; aye, and even one not gifted with an abundance of observation will learn more in many cases by a surgeon's mistakes, if these are clearly pointed out, than he will by the same surgeon's successes, no matter how brilliant.

The various essays and lectures are eminently practical and full of interest, while the illustrations are numerous. The volume is one well worthy of careful perusal.

A Handbook of Surface Anatomy and Landmarks. By BERTRAM C. A. WINDLE, F.R.S., Sc.D., M.D., M.A. (Dublin); Professor of Anatomy in the University of Birmingham. Third Edition. London: H. K. Lewis. 1902. Pp. xvi + 141. Post 8vo.

THE issue of a third edition of Professor Windle's little handbook at a comparatively early date is the best testimony which can well be adduced of the fact that its publication has filled a distinct want in anatomical literature. The bulk of the present issue, of course, remains identical with that of its predecessor. The name of Dr. T. Manners Smith has been omitted from the title-page, while the author acknowledges in his preface the valuable help he received from his present assistant, Dr. W. Wright, F.R.C.S., in the preparation of this third edition. We do not think further special criticism necessary for a text-book which has established its position. We feel sure that its contents are thoroughly appreciated by the anatomical students of the Birmingham University.

Aids to Dental Anatomy and Physiology. By ARTHUR S. UNDERWOOD, M.R.C.S., L.D.S. Eng., &c., &c. Second Edition. London: Baillière, Tindall & Cox. 1902. Fcap. 8vo. Pp. 130.

IT is clear that the author has dedicated much care and time to the publication of this small but very comprehensive

manual—and further, very successfully done so—being a pocket work that we can confidently recommend to the notice of every student and practitioner of dental surgery. There seems to be exactly the right amount of instructive material, neither too much nor too little, and this put plainly, yet scientifically, and not in language "over the head" of the younger aspirants to medicine. "*Elementary Nature*" of the teeth is followed by chapters dealing with calcification, the tissues, oral development and homologies of teeth, respectively; practical microscopy receives attention in the final division.

Throughout, this brochure is thoroughly and practically written. It has now reached a second edition, and, coming from the pen of an experienced and well-known dental surgeon, is just the kind of work which should aid—and will aid—all interested in the subject. Neatness and compactness have borne credit to the publishers.

Merck's Index. II. Auflage (Second Edition). Abgeschlossen Ende Juli, 1902. Darmstadt. 1902. 8vo. Pp. 374.

It is now barely five years since the first edition of this Index was published, and during that time 10,000 copies of the book have been distributed. The issue thus having been exhausted, it became necessary to prepare a second edition. The same basis has been broadly adopted in the present revision. The original plan, which has again been followed, was to take the whole range of products coming within the author's commercial dealings; and whilst, consonant with the nature of the work to which his house has devoted itself since the beginning of its existence, chief attention has been given to the needs of physicians and pharmacists, Mr. Merck has also endeavoured as much as possible to devote consideration to other scientific and technical requirements. In this way a work of reference has been provided which affords the means of answering readily many questions regarding chemicals, crude substances, galenical preparations, and technical products. It is evident from a reference to the work that the needs of busy practitioners have been well kept in view, and authorities have been collated in such a

way that the reader is presented in one volume with facts which would otherwise have to be sought out at the expense of much time and trouble in a library of standard works. Mr. Merck duly acknowledges his indebtedness to various authorities in the preface.

The Index is divided into six parts. The first comprises chemical bodies and definite principles, certain galenical preparations, and organic extracts; the second, special solutions and forms of substances used in analytical and microscopical work; the third, crude drugs; the fourth, minerals; the fifth, collections suitable to schools and museums; and the sixth, sundries. Throughout the various sections brevity and compactness have been aimed at, and to aid in this object, abbreviations have been used, of which full explanations are given. In the therapeutic notes special attention has been given to dosage, and the indications of the uses of remedies have been carefully revised. Again, in treating of most easily obtained poisonous bodies their antidotes have been most comprehensively noted.

This new edition naturally witnesses many extensions on the old. A marked feature in its contents is the information on the chemical and physical properties of the substances included, and also that on the technical application of various substances. The section on Reagents has been enlarged by remarks on special modes of application, and the descriptions of collections are more detailed.

Atlas of Illustrations of Clinical Medicine, Surgery, and Pathology. Compiled for the New Sydenham Society. Fasciculus XIV. (Double Number). Fasciculi I. and II. of New Series. London: The New Sydenham Society. Agent: H. K. Lewis. 1902. Folio.

THE untiring energy and indomitable will of Mr. Jonathan Hutchinson have fended off the dissolution of the classical literary association, which, though old in years, still bears the name of the New Sydenham Society. Mr. Hutchinson has done more than galvanise into apparent life the Society which owes so much to him. He has, in the fasciculi of the "Atlas of Illustrations of Clinical Medicine, Surgery, and

Pathology" now under review, written a masterly treatise on frambœsial syphilis. It is profusely illustrated by coloured and uncoloured plates. The latter are derived from various sources. They illustrate the same malady, as it is observed in different regions under different names—yaws, frambœsia, frambœsia tropica, frambœsial syphilis, &c. The coloured portraits are all copied from drawings which were executed in Ceylon, under the direction of Sir William Kynsey, one of the Fellows of the Royal College of Physicians of Ireland, to whose courtesy the Society is indebted for permission to publish them. They illustrate the conditions which, in Ceylon, and also in some parts of India, are known under the name of "Parangi," or "the foreign disease."

Mr. Hutchinson, at the outset of his masterly treatise, admits that these fasciculi are in some sense a controversial document, the controversy being whether or not yaws is to be distinguished from syphilis. The author's leaning is altogether in favour of the practical identity of the two maladies. "It is admitted almost on all hands that if yaws be not syphilis, it is, at any rate, a specific malady very closely resembling it."

Part II. of Fasciculus XIV., being II. of the Atlas of Clinical Medicine, Surgery, and Pathology, consists of illustrations of the diseases in Ceylon included under the term "parangi." They were prepared from original water-colour drawings by a native artist. Each plate is accompanied by descriptive remarks by Sir William Kynsey, C.M.G., F.R.C.P.I., late Principal Medical Officer and Inspector-General of Hospitals, Ceylon. These coloured plates are sixteen in number. They are highly artistic, and pourtray with striking effect the formidable and repulsive disease or diseases known under the accusing name "Parangi"—the foreign disease.

The coloured plates have been executed by Messrs. Bale Sons, and Danielsson, of London, and they reflect great credit on that well-known firm.

Should the subscription list be sufficiently large to justify the necessary expenditure—the subscription is only one guinea a year—it is proposed to complete the Atlas in five years in fasciculi of from eight to ten plates issued every three months. The illustrations will be selected from published

monographs, hospital and society reports, original drawings loaned for the purpose, and various other sources. The work of collection has already been, to a large extent, accomplished, and the materials in hand may be inspected in the Clinical Museum of the Polyclinic, 22 Chenies-street, London.

We trust that the enterprise of the New Sydenham Society and the energy of the Honorary Secretary, Mr. Hutchinson, will meet their due reward in the shape of a goodly and extending subscription list.

A Manual of Surgery for Students and Practitioners. By WILLIAM ROSE, M.B., B.S. Lond., F.R.C.S.; Professor of Clinical Surgery in King's College, London, and Senior Surgeon to King's College Hospital, &c.; and ALBERT CARLESS, M.S. Lond., F.R.C.S.; Surgeon to King's College Hospital, and Teacher of Operative Surgery in King's College, London; Examiner in Surgery to Glasgow University, &c. Fifth Edition. University Series. London: Baillière, Tindall & Cox. 1902. Pp. 1213.

THAT a fifth edition of this manual should be called for within four and a half years after the appearance of the first bears ample testimony to the popularity of the book. One of the most noticeable changes in the present edition is to be found in the opening chapter. Hitherto the first chapter in manuals and treatises on Surgery has been devoted to inflammation; but as the foundations upon which modern surgery at present exists are to be found in bacteriology and the principles of antiseptic and aseptic surgery, these subjects rightly take precedence—the first chapter being devoted to a study of these essentials; the second to inflammation.

An exhaustive review of a fifth edition, which has appeared but four and a half years after the first, seems to us unnecessary. The only point to which we would direct attention is that of devoting two pages to a description of the method of employing taxis for the reduction of a strangulated hernia, and discussing the causation of the persistence of the symptoms after reduction has apparently been effected. Surely in the light of modern surgery this is waste of space which might be more profitably occupied. We congratulate

the authors on the success attending their labours in producing the manual, and have no hesitation in recommending the book to the student as one of the best manuals on Surgery in the market.

The Temperance Reader. By the REV. W. H. COLOGAN and SIR FRANCIS RICHARD CRUISE, D.L., M.D. (Univ. Dub.); Honorary Physician in Ordinary to His Majesty King Edward VII., in Ireland. Dublin and Belfast: Eason and Son. 1902. 8vo. Pp. 155.

WE would very earnestly commend this excellent little book, specially intended as it is for schools, to all who are concerned in the education of the young. Written conjointly by a Roman Catholic clergyman and an eminent Dublin physician, it contains nothing from cover to cover which would offend the tenderest Protestant or Denominational susceptibilities. The one object of the authors is in simple telling language to teach the young the benefits of temperance, and to warn them of the dangers of intemperance.

The first ten chapters are presumably the work of Sir Francis Cruise's pen. In them we learn how food keeps us alive, the necessary elements of our food, the importance of water, concerning intoxicating drinks, about alcohol, its merits and demerits, the evils arising from its constant and unnecessary use, its effects on bodily strength and on the stomach, liver, kidneys, heart and nervous system. All this is told in plain, easily understood, convincing language, and the author concludes by saying (page 69):—"The final conclusion to which we are inevitably drawn is: that if we wish to have a sound mind in a healthy body we must exercise extreme caution in the use of all intoxicating drinks."

Lest it should be thought that the employment of the term "intoxicating" belies the statement made above as to the simplicity of the language, it should be explained that Chapter III. tells us that "our word *intoxicating* is derived from the Greek word *toxicon*, which means *poison*,

so all intoxicating drinks are more or less poisonous." This definition is, as logicians would say, adequate.

The remainder of this instructive "Temperance Reader," with the exception of Chapters XIV. and XV., bears internal evidence that it is the work of Fr. Cologan. Written by a Roman Catholic clergyman, there is not one word in some 80 pages which could hurt the feelings of any reader, no matter to what Communion he belongs. Having given a brief historic sketch of intemperance in the past, the author proceeds to answer the question—"Is there much intemperance now?" by quoting the opinion of many clergymen of various denominations, as well as of General Booth, head of the Salvation Army, of which all the members are abstainers. The General's words are to the point—"The drink difficulty lies at the root of everything. Nine-tenths of our poverty, squalor, vice, and crime spring from this poisonous tap-root." In Chapter XIII. the Judges, past and present, are quoted to prove the intimate relation which exists between intemperance and crime. Drink and pauperism, temperance and thrift, and the further benefits of temperance are the other topics which the Rev. Mr. Cologan discusses. In Chapter XIV. Sir Francis Cruise proves that intemperance shortens life. In Chapter XV. he traces the fatal connection which exists between intemperance and insanity, and concludes with an apt quotation from *Othello*—"O, that men should put an enemy in their mouth to steal away their brains! That we should, with joy, pleasance, revel, and applause, transform ourselves into beasts!"

The authors close their earnest and convincing plea for temperance with the eloquent words of Dean Farrar:—"In the long run, surely—unless men hopelessly blind their eyes and harden their hearts—such evidence cannot but influence not only every true Christian, but also every sensible patriot and every earnest-minded man."

PART III.

SPECIAL REPORTS.

REPORT ON PUBLIC HEALTH.[a]

By Sir Charles A. Cameron, C.B., M.D.; D.P.H., Camb.; M. and Hon. F.R.C.P.I.; F.R.C.S.I.; F.I.C.; Ex-President, Hon. Dip. Public Health, and Professor of Hygiene and Chemistry, R.C.S.I.; Vice-President and Ex-President of the Royal Institute of Public Health, and of the Society of Public Analysts; Medical Officer of Health for Dublin; Hon. Member of the Hygienic Societies of France, Belgium, Paris, and Bordeaux, the Academy of Medicine, Sweden, and of the State Medical Society of California, &c.; Examiner in Sanitary Science, Royal University of Ireland; Member of the Army Sanitary Committee, &c.

SANITATION AND VITAL STATISTICS IN JAPAN.

I have as usual been favoured with the Annual Report of the General Sanitary Bureau attached to the Home Department of the Imperial Japanese Government. It is for the year 1896, and was tardy in its publication.

At the end of 1896 the population numbered 21,561,023 males and 21,147,241 females; total 42,708,264. This shows an increase of 437,644 souls as compared with the previous year.

A table is given showing the rate of increase in each of the preceding ten years, the average, it is stated, being 10·27 per cent. These figures are clearly incorrect. In 1887 it is stated that the population increased in the relation of 14·61 per cent., and in the following year the rate of increase varied from 17·76 to 6·56. It is evident that the decimal points in all these figures are in the wrong

[a] The author of this Report will be glad to receive any books, pamphlets, or papers relating to hygiene, dietetics, &c. They may be forwarded through the agencies of the Journal.

place—14·61 should be 1·461, 10·27 1·027, and so on. In population and rate of increase there is a strong resemblance between Japan and Great Britain.

The birth rate was fairly high, being 1 per 349 persons, or 29·48 per 1,000 of the population. There was one birth per 6·58 couples. In one Prefecture (Chiba) the rate was highest, namely, 41·95 per 1,000 of the population. In Okinavvaken Prefecture it was lowest, namely, 22·09. In Hokkaido there were 18·84 births per 100 couples, and in Okinavvaken only 11·89. For every still-birth there were 10·08 mature births.

In 1896 there were 501,777 marriages and 115,654 divorces. In every 1,000 of the population there were 364·9 married persons.

The death rate in 1896 was 20·79 per 1,000. The births exceeded the deaths by 8·69 per cent. During the preceding 9 years the death rate varied from 19·14 to 22·25.

The total deaths numbered 904,473. Of these 68,409 were ascribed to "contagious and infectious diseases," 62,790 to consumption, 165,697 to diseases of respiratory organs other than consumption.

In my address to the Congress of the Royal Institute of Public Health at Exeter [a] I gave an account of the serum manufacture in Japan.

Smallpox appears to be of a very fatal type in Japan, the case mortality being no less than 31·65 per cent. In one Prefecture, Hyogoken, it rose to 49·67 per cent.

As regards typhoid fever, the case mortality was 21·58 per cent. The ratio of the disease per 10,000 of the population was 21·1. There were only 92 cases of typhus fever, of which 28 proved fatal. Taking an average of 10 years, the ratios of cases per 10,000 of the population were as follow:—Dysentery, 16·54; typhoid fever, 9·43; smallpox, 3·62; cholera, 2·86; diphtheria, 1·06; typhus fever, 0·15.

When cholera broke out in January, 1896, the Department adopted every measure likely to prevent the spread of the disease. As regards smallpox, vaccination seems to be carried out extensively. Strong disinfecting measures were employed to combat this formidable disease. In 1896

[a] See the number of this Journal for September.

no fewer than 1,441,452 persons were vaccinated for the first time, and 2,151,336 were re-vaccinated. As the births in 1896 numbered 1,282,178, the primary vaccinations were considerably in excess of the births.

Prostitutes are medically examined in Japan. In the year under review 1,779,845 examinations were made, and 72,280 cases of disease were detected. One woman in 25 women was affected.

There appears to be good hospital accommodation in the Japanese Empire. There were in 1896 two governmental, 164 public, and 426 private, hospitals.

In Japan no one can legally practise medicine or surgery unless his name appears on the Medical Register. The examinations for medical practitioners are a preliminary and final. 2,836 students presented themselves for the first examination. Of these only 619 passed. 1,552 presented themselves for the final examination, and of these 276 satisfied the examiners.

Examinations for licences in pharmacy, dentistry, and midwifery were also held. In 1896 there were 39,214 medical practitioners in Japan. Of these 24,720 had not been examined, having practised "medicine from former times."

BACTERIOLOGICAL RESEARCHES.

The Supplement to the Thirtieth Annual Report of the Medical Officer of the English Local Government Board for 1900-01 contains much interesting matter, especially relating to bacteriology.

Dr. Sidney Martin's researches on the viability of typhoid bacilli in soils commenced some years ago, and were continued in the period covered by the Report. He found that sandy, peaty, uncultivated soils generally were inimical to the bacilli; when introduced into them they perished rapidly. When soils containing organic matter were sterilised and sown with typhoid bacilli the micro-organisms multiplied rapidly and pervaded all the soils. Very different was their condition when the soils were not sterilised, for then they soon became extinct, especially if the soils were damp. Dr. Martin believes that the bacteria

which are indigenous to the soils have the power of causing the intrusive typhoid bacilli to disappear. This is not due to their requiring and using all the organic matter in the soil for their own development, but seems to be the result of the poisonous effects of the soil microbes on the typhoid bacilli. Dr. Martin says that as a general result of his investigations "it is to be concluded that the typhoid bacillus has commonly only a short existence in the soil; that it is destroyed by the products of the putrefactive bacteria which exist in most cultivated soils." Thus it will be seen that Dr. Martin's results are at variance with those of Dr. Robertson, who stated that the typhoid bacillus survived for months in ordinary soils.

In the Report of the Medical Officer of the Local Government Board for 1899–1900 Dr. Theodore Thomson suggested that the prevalence of enteric fever at Chichester might be due to the soil pollution, as it could not be accounted for satisfactorily by polluted water, milk, or defective sewers.

Dr. Houston considers this hypothesis in the Report for 1900-01. He made 30 chemical and bacteriological examinations of sub-soil water taken from Chichester, but found no bacilli of typhoid fever in them, and many of the waters were very pure. It is possible, however, that a soil might be very impure and yet let water pass through it without contaminating it. The soil has wonderful power of retaining organic matter, and even impure water may be made less impure by filtration through an impure soil. Dr. Houston concludes his very elaborate paper as follows:—

FINAL CONCLUSIONS.

A. *Chemical.*

None of the thirty samples of Chichester well water could reasonably have been condemned on the basis of the free ammonia, albuminoid ammonia, or oxygen absorbed from permanganate tests. Nearly all of them would have been classed as of great organic purity, though the amount of chlorine in a number of samples was perhaps suspicious.

B. *Bacteriological.*

(1) The *general results and inferences* are as follows :—

(*a*) *Total number of bacteria per cc.* :—In 3 samples, 1,000 but less than 10,000 ; in 13 samples, 100 but less than 1,000 ; in 11 samples, 10 but less than 100 ; in 3 samples, less than 10.

(*b*) "*Gas*" *in gelatine* "*shake*" *cultures* (24 hours at 20° C.)—In 2 samples, + 10 cc. — 1 cc. ; in 6 samples, + 100 cc. — 10 cc. ; in 22 samples, — 100 cc.

(*c*) *B. coli* (*and allied forms*).—In 6 samples, + 0·1 cc. ; in 6 samples, + 10 cc. — 0·1 cc. ; in 10 samples, + 100 cc. — 10 cc. ; in 8 samples, — 100 cc.

(*d*) *Spores of B. enteritidis sporogenes* (Klein).—In 2 samples, + 100 cc. — 10 cc. ; in 2 samples, + 200 cc. — 100 cc. ; in 26 samples, — 200 cc.

(*e*) *Streptococci.*—In 5 samples, + 10 cc. ; in 25 samples, — 10 cc.

(2) These general results *may* be interpreted as indicating nothing more than that some of the waters were polluted and that others were of great bacterial purity.

(3) But it may be questioned whether they do not indicate something more than this—namely, that the waters in general were possessed of intrinsic biological qualities pointing to their late association with matters of intestinal sort.

(4) Biological qualities such as the above are not proper to waters derived from pure sources ; moreover, they are apt to be masked chemically by the mechanical filtering action of the soil.

(5) If this view be correct, immunity from danger in drinking such waters would be relative, not absolute.

(6) The circumstance that the inhabitants of Chichester drawing their water supply from these local wells have not seemingly suffered to any conspicuous extent from enteric fever in the past, may possibly be referred, not to the complete absence of dangerous pollution of well waters, but to the beneficial mechanical action of the soil in reducing the amount of morbific poison contained in the soil water.

(7) The facts observed by me at Chichester lend some support to Dr. Thomson's tentative hypothesis that soil plays some part in "fostering and localising" enteric fever in this town, inasmuch as the well waters representing the more or less perfectly filtered "washings" of soil nevertheless possessed certain biological qualities suggestive of fouling with matters of intestinal outcome—qualities not inconsistent with the supposition that possibly the soil at Chichester fosters in a higher degree than most soils "the vitality and morbific power of the infective material of enteric fever."

(8) B. typhosus could not be found in any of the samples examined. But B. coli (or closely allied forms) was found in a majority of the waters; and further, a small percentage of these coli-like microbes gave a positive result with the agglutination test, with human typhoid blood, with the blood of a typhoid immunised guinea-pig, or with blood of both sorts.

INFECTED SHELLFISH.

It is now clearly established that shellfish may become the media of spreading infectious disease. Dr. Klein publishes in the Report of the Medical Officer of the Local Government Board the result of his investigations on infection of mussels and cockles with typhoid bacillus and Koch's cholera vibrio. The subject is very interesting, especially to residents at seaside places like Dublin. Although cockles and mussels are usually cooked before being eaten, yet they are sometimes—especially cockles—eaten raw. In the uncooked state they are especially dangerous if obtained from estuaries and shores subject to sewage pollution.

Dr. Klein obtained cockles from Dr. Thresh, Medical Officer of Health for Essex. They were taken from a source not liable to pollution, and were in a fresh and excellent condition. The mollusks were deposited in five gallons of sea water. There was added an emulsion of 24 hours' old agar culture of cholera vibrio. On the following day one mussel and one cockle were taken out and examined. They were lively, and on being touched closed their shells. Their shells were washed, brushed, and dried.

Next, by means of a sterilised instrument, the shell of each mollusk was pierced, the animal extracted from it and cut up, and the turbid fluid thus obtained sucked into a glass pipette. Several drops from each pipette were placed in test tubes containing sterile peptone salt solution. Then followed the usual inoculation at 37° C. In 24 hours the contents were turbid, and on examination they showed vibrios in almost pure culture. Other experiments were made, which were confirmatory of the first results. It was proved that cockles and mussels retained for 24 hours in cholera-infected water may take up and retain the cholera vibrios unimpaired as regards their culture and morphological characteristics.

Similar experiments proved that cockles and mussels took up from infected sea water the bacilli of typhoid fever.

Even when put into clear sea water the mollusks retained for 48 hours the infective micro-organisms.

Dr. Klein remarks that even boiling water may not suffice to destroy infective micro-organisms in shellfish. It is only thorough cooking that is certain to destroy them in the deeper layers of the mollusks.

VENTILATION OF SEWERS.

The ventilation of street sewers by level manhole ventilators was advocated some years ago very strongly, especially by the engineers. In London the system was generally adopted, and Dublin was not far behind London as to the number of ventilators per mile of sewers. It is clear that the direct communication between the sewer and the open air practically renders the sewers open ones. That is much the same as if the sewage were conveyed through the streets in open conduits. Indeed, open conduits would be better, for then the surface of the sewage would be exposed to a larger amount of air, whilst in the present system, the openings being at tolerably long intervals, the escape of effluvia takes place at limited points. Now it often happens that persons whose residences face these openings complain of foul odours which those who reside midway between every two openings do not complain of. In the case of the Dublin sewers, when complaint is made that offensive effluvia

emanate from particular ventilating openings, my diffuser ventilator replaces the open ventilator. The diffuser is a battery of four very porous cylinders of unglazed earthenware. They are placed on the crown of the sewer in a water-tight chamber, which communicates with the external atmosphere. The sewer air diffuses slowly through the cylinders, and the outer air diffuses through them into the sewer. No sudden outflux of gases, vapours, &c., can take place, and no micro-organisms can pass through the cylinders, which are in effect air filters. There are many of these diffuser ventilators in use in various parts of Dublin. There is a general idea that sewers unventilated contain air under-pressure which is likely to force the water traps, especially weak ones, on house drains. My experience is that there is very little pressure, and generally no pressure at all, on the sewer air. It is remarkable that Bristol, the sewers of which are unventilated, has an extremely low typhoid fever death rate.

In Bath there are no ventilating gratings over the sewers in the middle of the streets, but there are about 30 shafts, 30 feet each in height, which act as ventilators. If the exits are not close to windows this method has an advantage over the level manhole ventilators.

COMBINED DRAINS.

An important point in sanitary law was decided on March 17th, 1902, in the English King's Bench. It was in connection with a case stated by the Justices of Essex. The Woodford Urban District Council (appellants) had required the respondent (Stark) to provide separate drains for two houses which he had built. As he had already constructed a single or combined drain, he refused to alter it. The case came before the Justices, who decided that the Urban Council had no power under section 25 of the Public Health (England) Act, 1875,[a] to compel the respondent to make separate drains; that they only had power to prescribe the size, materials, levels, and fall of drains. The Council appealed from this decision, and the case came before the Lord Chief Justice (Alverstone) and Justices

[a] There is a similar section in the Irish Public Health Act, 1878.

Darling and Channell. They allowed the appeal, and remitted the case to the Justices. The Lord Chief Justice observed that the Justices should have decided whether or not a house was constructed according to the section of the Act before them. He did not think that the word "house" in the section meant a building. If it did, then a person making a combined drain of the sort in question would be constructing a sewer which would subsequently have to be maintained by the local authority.

THE PLAGUE IN NEW SOUTH WALES.

The Board of Health of New South Wales has issued an interesting report on the introduction of plague in Sydney. It appears that the SS. Antillian, carrying a crew of 65 persons, left Cape Town, South Africa, on February 19, 1902, and entered Sydney Harbour on March 2nd. She had a clean bill of health issued at Cape Town. On arrival all hands were reported well with the exception of one sailor, who was believed to be suffering from pleurisy. Information having been received that plague had broken out at Cape Town after the departure of the Antillian, the vessel was at once disinfected with sulphurous acid and mercuric chloride, and the sailor was examined by Dr. W. G. Armstrong, Medical Officer of Health, who diagnosticated the sailor's illness to be plague. The vessel was sent to the quarantine station, and the sailor removed to hospital. Inoculation with plague antitoxin was offered to all on board, but only ten accepted the offer. Subsequently a few more were inoculated. Bacteriological researches with material obtained from deep hardened area in an axillary swelling and from the enlarged supratrochlear gland of the patient proved the existence of *Bacillus pestis.*

On investigating the cause of the outbreak of plague on board the steamer, the conclusion arrived at was that it was due to infected rats. No human being was known to be infected with plague at Cape Town when the Antillian left that port. It was, however, known that rats in the south arm of Cape Town docks had been dying from some epizöotic malady. It seems odd that the carcases of some of them had not been examined bacteriologically. For a

fortnight before the Antillian left this epizöotic had been in progress. The Antillian had been berthed in this dock, and no doubt some infected rats had boarded her. About 100 of these animals were found in the vessel after the disinfecting process had been performed.

Only a second case of plague amongst the crew, and the vessel, after thorough disinfection and the destruction of all the rats on board, was allowed to leave for Cape Town. She carried 527 troops, but none of these or of the crew suffered from any suspicious illness during the voyage. This case is interesting, because it seems to prove clearly that rats were the means of communicating plague to man. From the history of the ship for fifteen months previous to her arrival at Sydney it is clear that she was at no port in which there were cases of plague. It is an unwelcome piece of intelligence to learn from this report that although 50 men had been engaged for about a year in the systematic destruction of rats, there was reason to believe that the natural increase among them had continued unchanged for at least all practical purposes.

INSPECTION OF DAIRIES.

The distribution of disease by infected milk is a fact so thoroughly established that there is no further need to discuss its possibility. It is not enteric fever alone that it may spread; it may give rise to enteritis and other diseases. How important, then, is it not that the places from which our milk supplies are obtained should be kept in a cleanly state, and that no person suffering from a contagious disease, or liable to be in contact with anyone suffering from that disease, should be concerned in the work of the dairy. In the rural districts from which so much of our milk comes, but little attention is paid to the hygiene of the dairy, or of the dairy herds. The following regulations as to the inspection of dairy farms have been made by the Plymouth Sanitary Authority:—

BOROUGH OF PLYMOUTH.

INSPECTION OF DAIRY FARMS.

ANY dairy farmer supplying milk, etc., to the inhabitants of Plymouth will undertake to carry out the following regulations:

1. In the event of an employé, or any person residing on or off the farm premises, becoming ill, he or she is to be immediately isolated and certificate of medical practitioner at once obtained as to the nature of illness and forwarded to the Medical Officer of Health, Plymouth. Persons suffering from any infectious or contagious disease to be at once removed.
2. Milk carts never to be used for the carriage of dung or any article of an offensive character.
3. Milk carts, cans, dairy, and all other utensils in connection with the business of the dairy to be kept perfectly clean.
4. No milk to be stored or scalded in a dwelling-room.
5. No milk for consumption to be taken from cows after calving until a proper period, viz., seven days, shall have elapsed.
6. No milk to be supplied from cows whose udders are not in a perfectly healthy condition.
7. Absolute cleanliness to be observed by the persons engaged in milking.
8. The shippens and other premises to be kept properly lime-washed at frequent intervals, and premises generally kept thoroughly clean and wholesome.

The Medical Officer of Health to be satisfied as to the purity of the water used on the dairy farm.

Shippens to be kept in accordance with the provisions of the Dairies, Cowsheds, and Milkshops Order, 1899, as to ventilation, cubic space, drainage, and water supply.

In order to carry the foregoing regulations into effect it is proposed:

1. To send circulars to all known suppliers of milk to Plymouth, together with copy of the regulations, and invite them to notify the Medical Officer of Health of their willingness to comply.
2. The Medical Officer of Health would then visit the farms, grant certificate if found up to the required standard, or if alterations or improvements required, to suggest same, and, when carried out, to grant certificate.
3. The list of dairy farmers to whom certificates may be granted, to be published every three months, either by being advertised or printed on handbills, to be distributed to consumers.

4. Certificated dairy farmers to be permitted to advertise in any way they may think proper the fact that their farms have been approved by the Sanitary Committee.
5. After farms have been certified, the Medical Officer of Health or his inspector will visit same occasionally, and if it be found that a licensee has failed to comply with either of the requirements, the same to be reported to the Committee, to be dealt with according to the circumstances of the case.
6. If the Committee should decide to withdraw the certificate from any particular farm, the fact to be made publicly known to the consumers.
7. The foregoing regulations to be carried out with a due regard to the small dairy farmer, so that, whilst the health of the public may be safeguarded, the circumstances of the small dairy farmer may not be overlooked.

DISINFECTION BY FORMALDEHYDE.

The experiments of Rubner Peerenboom prove that dry formaldehyde has no disinfecting power, whilst in moist air it was most destructive on microbial life. In my Manual of Hygiene, published in 1874, I gave the results of experiments which I made, which proved that dry chlorine and sulphurous acid were very much less efficacious in the destruction of micro-organisms than the moist gases of the same kind.

The use of formaldehyde in the disinfection of infected rooms is steadily increasing. It is, however, desirable to employ it liberally and in the form of spray. The gas itself derived from the heating of pastiles containing paraformaldehyde or trioxymethyl is used in the case of clothes. It would be desirable if all new clothing were treated with this gas before they were sent home, for undoubtedly danger sometimes lurks in new clothes, which may have been made by some one just recovered from, say, scarlet fever, or had been in contact with a scarlet fever patient.

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

Two Careers Compared: Open to the Newly Qualified Medical Man.[a] By L. H. ORMSBY, M.D., F.R.C.S., President of the College; one of the Senior Surgeons of the Meath Hospital and County Dublin Infirmary.

IT has been customary to inaugurate the Winter Medical Session of study in the School attached to this College by a short address from the President. I, therefore, will endeavour, to the best of my ability, to give you a few of my views on certain subjects connected with the profession you have selected for your "Life's Work." I may mention that since last year the Council of this College appointed a Sub-Committee to confer with a like Committee of the Royal College of Physicians, for the purpose of altering and assimilating our curriculum to that of other Licensing Bodies. The alteration has been agreed to by both Colleges, and we trust that the changes made will be of advantage to our students as well as to the teachers.

I well remember, considerably over thirty years ago, entering this College for the first time and wondering if I should ever be able to overcome the many doubts and difficulties which seemed to beset me at every step.

Our lecturer in anatomy of that day, the late Professor Morgan, with his cheery, encouraging smile, used to advise his pupils to "cheer up and not be dismayed, and all would come right in the end to those who honestly and determinedly stuck to their work, and endeavoured by hard and industrious labour in the dissecting room to become scalpellary and not lingual anatomists."

Medical students have changed so much in the last sixty years that one can hardly believe what a medical student was like in days gone by, as depicted in the novels and periodicals of that time, which represented them as jolly, rollicking, careless young fellows of the Bob Sawyer type—idle, dissolute. It was a common

[a] Inaugural Address introductory to the Medical Session 1902–1903, delivered in the Schools attached to the Royal College of Surgeons, Ireland, November 3rd, 1902.

thing in those days for a young fellow never to attend lectures, never to frequent the anatomy hall, except to sit smoking and telling stories to his friends at the dissecting room fires. He often boasted he never dissected a part or attended a lecture, and yet three months before his final he was able to read up, and after two or three tries got through and became qualified. I wonder what our student in medicine of to-day would think of such a regime! I hardly think he could understand such a system when compared with the present sessional examinations which must be passed in order, or the student's progress would be at once stopped. I think you will all agree with me how far superior the present system is for the student as regards himself, his parents, his teachers, and all concerned. The student of to-day is, as a rule, a steady, serious, hardworking young fellow, always looking forward to an approaching exam., which he knows he must pass before he can prepare for the next. As beginners, I warn you not to waste your time in looking at abstruse and uncommon cases which you will not be able to comprehend, instead of learning to dress a cut or adjust a bandage. You must educate your mind by degrees, first grasping the elementary principles of your profession, and so lay the foundation of a sound, practical knowledge of that noble science. From your hospital you will repair to the medical school, and in the dissecting room let the same rule hold good; do not try to trace nerves and arteries until you have learned the names of the bones and muscles; master the osseous system in your first anatomical year, and you will find the knowledge of the greatest service to you ever after. You will also attend the prescribed lectures during the session. Your lectures being over for the day, you will return home. This is the time to do a little reading, on which subject, I may mention, there is a great difference of opinion. I have always recommended a systematic course of reading for the junior and senior student—that is, find out how many hours you can read with benefit; it may be only three or four hours, but whatever it is, let that be kept to. Let no single day pass without furthering the scheme you have resolved in your mind to accomplish. By thus working on a system you will be astonished how much good and lasting work has been got over in a month; far more, I can assure you, than by spasmodic fits of apparently very hard labour and close reading, which, like the storm, is usually followed by a dead calm of idleness! If you want to keep your health in a state that will enable you to study, you must also think of recreation; for I would be the last person in the world to wish you to forget

that. Mental tension requires mental relaxation; in this equipoise mind and body work more harmoniously together. You should, if possible, after the hours of lecture take a daily walk, not in the precincts of the city, but towards the country. If you do not care to walk or cycle, the various trams and railway lines afford a cheap mode of enjoying the open air. If you work hard all the week you may take a half holiday on Saturday, which you can spend with advantage in relaxation such as football, golf, or cricket. Sunday will, as a matter of course, be a day of rest, and you can thus begin work on Monday with renewed vigour. Lastly, gentlemen, be extremely careful to give yourselves (those who live in lodgings particularly) good, generous diet; if you work hard you must feed in proportion; it is false economy and will only undermine your health to do otherwise. Many students, I know, are straitened in means while proceeding with a very expensive profession; others spend their money on other things, and stint themselves in food to the detriment of their health. To third and fourth years' men my remarks apply as well as to beginners. I would merely add, you must advance in proportion, so that when you are eligible you will be able to pass your examination without delay, instead of becoming a chronic of six or seven years' standing, a fate by no means uncommon among the procrastinating and the idle.

To you who are qualified, or who are just about to qualify, permit me to say a few words. This is a time generally of very great anxiety and doubt, and perhaps the most important era in your whole career. Like a ship freighted with precious cargo about to leave the shelter of a friendly harbour to enter upon the rough billows of the open sea, you are emerging from a state of pupilage to take upon yourself the responsibilities of life; but a stout heart will breast its billows, and a strict adherence to the course of duty and of honour will bring you safe through its storms and turmoil to a haven of tranquil content and well-earned repose. The first step towards settling down in your profession, therefore, should be seriously and calmly considered; the advice of judicious friends should be sought; but above all things do not indulge in vacillation. Valuable time is wasted and good opportunities are frequently lost in coming to a decision. You will ask what prospects are before you. In answer I may mention you have the Army, the Navy, and the Indian Military Services, Foreign Appointments, Ship Surgeoncies, and lastly, private practice in the country or city. Of the present and future prospects of two

of these I would like to say a few words. To commence with the Royal Army Medical Corps.

ROYAL ARMY MEDICAL CORPS.

A candidate for a commission in the Royal Army Medical Corps must be 21 years and not over 28 years of age at the date of the commencement of the examination. He must possess, under the Medical Acts in force in the United Kingdom at the time of his appointment, a registrable qualification to practise. He must fill up a form of application and declaration which can be obtained on application to the Director-General, Army Medical Service, 18 Victoria-street, London, S.W., and submit it to the Director-General in sufficient time to permit of reference to the Medical School in which the candidate completed his course as a medical student.

The Dean, or other responsible authority, of such school will be requested by the Director-General to enter a confidential report as to his character, conduct, professional ability, and fitness to hold a commission in the Corps, and to this report special importance will be attached. After the form of application and the confidential report above alluded to have been received, the Director-General will have his physical fitness decided by a Board of Medical Officers, in accordance with regulations which can also be obtained from the Director-General. The entrance examinations are held twice in the year—usually in January and July. The Secretary of State reserves the right of rejecting any candidate who may show a deficiency in his general education.

An entrance fee of £1 is required for each candidate admitted to the examination, and is payable at the conclusion of his physical examination if pronounced fit.

A candidate successful at the entrance examinations will be appointed a lieutenant on probation, and will be required to pass through such courses of instruction as the Secretary of State shall decide, and after passing the examination in the subjects taught, and satisfying the Director-General that he possesses the necessary skill, knowledge, and character for permanent appointment in the Royal Army Medical Corps, his commission as lieutenant will be confirmed. The commission will bear the date of the officer's appointment as lieutenant on probation.

I have no doubt you are anxious to know what I think of the R. A. M. C. as a career.

Much has been written in the Press, and spoken in lecture theatres and elsewhere, regarding this most important branch of the Service. Change after change has been made by respective Secretaries of State for War in warrants without number, so as to endeavour to improve the Medical Department of the Army, in order to make it attractive and to induce the best and most eligible of our young qualified men to enter its ranks. Warrants are very good indeed if they guarantee all that they promise, and that the provisions will be lasting and secure. The recent War in South Africa has, perhaps, done more to direct public attention to the Corps than anything else. A recent writer on the subject has justly said that all praise is due to the increased science, knowledge, and skill exhibited by the Surgeons of the Royal Army Medical Corps and their civil colleagues in South Africa; and if the Government and the public do not give the reward and the credit to which they are justly entitled, I hope it will be some consolation for them to know that the whole profession in the United Kingdom consider that their conduct through the whole campaign in South Africa was beyond all praise. Our eulogies of the R. A. M. C. cannot be too great, nor our support and assistance to them too thorough, in their fight against War Office starvation of the Medical Service and sentimental official red tapeism. Has any other unit of the South African field force, except the R.A.M.C., been expected to carry on an exceptionally large war service with its peace establishment, and further, with practically no reserve to draw upon (except the Civil Ambulance Organisations) to make up for the wastage which occurs even in peace, let alone in war. Yet the R. A. M. C. were expected to do it, and astonishment was shown and abuse showered when it was proved to be a physical impossibility. Here again it seems that anything is good enough for a doctor. It is useless for sentimental lay scribblers to write arrant nonsense about the necessary luxuries and requirements for the treatment of the sick and wounded in war. War is war; and the sufferings and inconveniences of a sudden, unexpected engagement could not have been rectified or alleviated all in a moment on the barren veldt by even the willing hands of a deplorably undermanned service as it might have been in a well-equipped London or Dublin Hospital.

But it is an acknowledged fact, testified by combatants without number of the highest rank, and by one no less great than His Excellency Earl Dudley, Lord Lieutenant of Ireland, who at a public dinner recently in this city stated from personal observation

in the battle fields of South Africa that in no war ever waged at any time, or in any country, were the sick and wounded more rapidly or more efficiently attended by the officers and men of the R. A. M. C. than the one in South Africa. I would only ask my hearers to compare the treatment of the sick and wounded in our previous wars with the treatment of the sick and wounded soldier of to-day.

What about the battles of the Peninsula under Wellington, and the carnage and sufferings that took place at Waterloo? What about the Crimean War? Need I refer to the battle of Solferino on the 24th of June, 1859, which lasted for more than fifteen hours, and in which more than three hundred thousand soldiers were engaged in the most bloody conflict which has occurred in modern times, with sufferings too terrible to relate. And more recently the Franco-German War in 1870.

The want of a rapid and independent Army Medical Transport of medical comforts and appliances to the front was to a great extent the cause of the aggravation of alleged inconveniences in certain places.

However, when all is said and done (as regards Army Reform in the future), no branch of the Service behaved with greater heroism than our splendid brethren in the R. A. M. C. in South Africa, many of whom laid down their lives in the field, and none of whom flinched from going into the thick of the fight when duty called them to do all that love and skill could do for their fallen and suffering fellow soldiers. For such heroism and bravery many Army Surgeons have received at the hands of their Sovereign that priceless and coveted Badge of Bravery—"The Victoria Cross." Need I mention our honorary Fellow, Captain Thomas Crean, V.C., and as the President of this College I, on the part of our Fellows and Licentiates, offer the officers and men of the Royal Army Medical Corps our warm congratulations on their gallantry in the field and the noble discharge of their onerous and endless duties. After Mr. Burdett Coutts' violent attack on the Service a Commission was appointed, who proceeded to South Africa and inspected the situation, the arrangements, conditions, and all other matters in detail, and examined many witnesses competent to give an opinion. This Commission drew up a long and valuable report which exonerated the officers of the Royal Army Medical Corps from blame. The present Secretary of State for War, the Right Hon. St. John Brodrick, took the matter into his hands in earnest, with a firm determination to make the R. A. M. C. the most efficient organisation

in the Army, and for this he merits the best thanks of our College. He at once called to his assistance the men who were in sympathy with his ideas, and who were thoroughly competent to give the necessary information and advice.

An expert Organisation Committee was appointed by Mr. Brodrick, who acted as chairman, and after lengthened deliberation their report and suggestions were issued—Sept. 28th, 1901, and although all grievances were not removed or redressed altogether in this report, still enormous progress was made. The competitive examination for entrance was altered and made far more practical. The pay of the Army Medical Officer in all ranks was materially increased.

Sir William Taylor, K.C.B., one of the most eminent and popular administrative officers in the Service, was appointed Director-General, and in his hands the members of the Corps may always feel that their interests are safe, as he has a thorough knowledge and grasp of the wants and requirements of the Service, and is a strong and determined man, who will see that his Corps have fair play and justice done to them.

The next step was to see that the Director-General, the administrative head of the Corps, should have a seat on the Army Board and War Office Council, and should thus be able to take part in all deliberations in connection with his arm of the Service.

This has been granted, and now he takes his seat among the heads of all the other branches of the combatant ranks of the Army Council. The next in command at 18 Victoria-street is the Deputy Director-General. I am happy to say, to the credit of Mr. Brodrick, that he selected an Irishman for the post, in the person of Lieutenant-Col. A. Keogh, C.B., now ranking as Surgeon-General, a go-ahead countryman of our own, who did splendid work in No. 2 General Hospital at Pretoria during the late war, and showed himself to be a careful, painstaking, and efficient officer, who had a remarkable aptitude for administrative and constructive work. Mr. Brodrick may therefore be congratulated on the two men he selected to carry out the much-needed reform in the Service, and for the sake of our country I am glad that one is an Irishman.

An Advisory Board was then elected.

The grievance as regards increase of pay for our Army Medical Officers serving in India, on the same line as the combatant ranks, has been, I have from an official of high position the best authority for saying, almost finally arranged with the Secretary of State for India. From all I can learn there are a few minor grievances yet

to be remedied, which, no doubt, will receive attention from the Advisory Board, and will be rectified in due course. I am happy to say the retiring pension after 20 years' service at £1 a day has been also assured.

Netley Hospital as an Army Medical School has been abolished. It will be still, however, utilised as a great Military Hospital.

But Mr. Brodrick, with the enthusiasm and determination of a great reformer, has established an Army Medical Staff College in London, and it is now in temporary buildings in full active work, although somewhat hampered for suitable accommodation, which could not be produced all at once in starting. At the inaugural dinner of the Medical Staff College, held on the 8th October last, at the temporary mess in the Hotel Belgravia, Mr. Brodrick, the guest of the evening, spoke in most complimentary terms of the Corps and its Chief, and he intimated that he hoped soon to see the Medical Staff College in London accommodated in suitable buildings provided with laboratories, lecture theatres, and research class rooms, second to none in the Kingdom, where lieutenants on probation will remain for a short time on joining the Service, and where senior officers of the Corps can attend special classes during the period of study-leave, and thus keep themselves abreast of the advances in Medical Science. They will be thus enabled to complete investigation in this Metropolitan Staff College, which probably they may have commenced when serving in foreign stations.

I may mention that the Secretary of State for War and the heads of the Department are determined to make the Army Medical Officer in future the most highly trained scientist to be found in any country, and ample facilities will be given to men having different aptitudes to study and practise special and scientific work in the Service. The adaptation of the Theory and Practice of Medicine with the Science and Art of Surgery to the science and art of war, together with the successful and efficient treatment of the sick soldier, whether in peace or in war, as well as the maintenance of his physical condition as a fighting unit, will be the burning question in future; and to have this carried out these humanitarian problems must be undertaken by a highly trained and efficient body of Army Medical Officers. And I have the best authority for saying that zeal and honest work in the Corps means the securing of position and good posts in future. Seniority alone without efficiency and administrative capabilities will not, I am

led to believe, secure promotion. The best man will advance to the higher ranks, and the heads of the Service look to the civil profession to support them in this wise and just decision, and I venture to think the appointment of the Advisory Board will prove a boon and assistance to the Director-General in securing the best and most suitable candidates for the Service.

In conclusion, I shall mention the present rates of pay of officers in all ranks of the Royal Army Medical Corps, and I will ask you to compare it with the pay of other professional positions in civil life.

Inclusive of all allowances, except field and travelling allowances—

ARMY MEDICAL SERVICE.

At Head Quarters :—	Yearly.
Director-General	£2,000
Deputy Director-General	1,500
Assistant Director-General..	850
Deputy Assistant Director-General.. ..	750
Exclusive of allowances daily—	
At other stations :—	
Surgeon-General	£3 0 0
Colonel	2 0 0
Lieutenant-Colonel	1 10 0
Lieutenant-Colonel specially selected for increased pay after at least 8 years' service abroad	1 15 0
Major	1 3 6
After three years as such	1 6 0
Captain	0 15 6
After 7 years' total full pay service	0 17 0
After 10 years' total full pay service	1 1 0
Lieutenant on probation and Lieutenant ..	0 14 0

I therefore think that a young qualified man must be very hard to please if he refuses to enter the Service where the status and position of the Army Surgeon is now so well defined, and it is, in my opinion, a military service which any gentleman should be proud to serve in, and where merit and loyalty to his Corps will secure a successful career. I therefore have no hesitation in advising all those who have a taste for military life to enter the R. A. M. C. It is undoubtedly a splendid Service, and offers great advantages to the young doctor of culture, efficiency, and social

position joining its ranks. The Service also affords the medical officer an opportunity of seeing life and the world in some of its best aspects, and foreign service has many and varied attractions in our widely-extended Empire.

IRISH POOR LAW MEDICAL APPOINTMENTS.

I now turn nearer home. I would wish to direct your attention to the gross and heartless treatment in many instances meted out to our medical brethren serving in the Irish Poor Law Medical Service throughout the country, particularly on the question of superannuation after a lifetime of toil and ill-requited labour.

What inducement, I would like to know, is there for highly qualified young medical men to enter the Service, when they know that after forty or fifty years of hard and incessant labour they must depend on the caprices and tempers of a set, in many cases, of hard and unsympathetic guardians to grant them a small pittance by way of superannuation, to keep them in some comfort (or rather existence) for the declining years of their lives. I find the average salary paid to Irish Dispensary Medical Officers represents a small fraction under £100 per annum, out of which the Medical Officer must pay all expenses necessary for the discharge of his duties—rent, taxes, horse, vehicle, servants, &c. So that practically no portion of his salary is available for his support, for which he has to depend on the small emoluments arising from his salary as Medical Officer of Health for his district, a salary which averages from £10 to £15 a year, and registration and vaccination fees, averaging about £30 a year, together with whatever private practice his district may afford him.

It is regrettable that there are found doctors willing to enter the Service under the present conditions, the acceptance of which degrades the honour and dignity of the whole profession, and means that so long as men can be found to fill the ranks this state of affairs will continue.

Yet, year after year, old and worn-out Dispensary Medical Officers, who ought to have received their just pensions long ago, are to be seen at all hours of the day and night, in all weathers, pursuing their beneficent work at a time when their masters, the guardians, are enjoying comfortable ease and untroubled sleep. There is, in my opinion, no more sad and discreditable system in any department of the public service than the one I am forced to allude to to-day.

Who has not heard the story of Dr. Smyth, the Dispensary Medical Officer of Burtonport, Co. Donegal, to which the district of Arranmore is attached. On this island, which is out in the Atlantic, separated some miles from the mainland, an outbreak of typhus occurred in November last, and it was while working among the fever-stricken people that Dr. Smyth lost his life by contracting the disease. The history of his work supplies one of those types of noble self-sacrifice and unflinching devotion to the path of duty, which touches our finer feelings and sends a thrill of pride to the heart. Dr. Smyth's devotion to duty among the fever-stricken homes of Arranmore cost him his life, and I believe there are many men now in the Service who would display the same heroism if it was necessary to do so. I am happy to say the widow and family of the late Dr. Smyth. thanks to the able and determined advocacy of our respected Ex-President, Sir Thomas Myles, have been amply provided for.

I have referred to this occurrence, not because it stands out in singular prominence, but because it is an act of heroism which happens to have engaged public attention, and to have evoked in a remarkable degree public sympathy. But scores, hundreds perhaps, of similar instances of devotion to duty have characterised the lives of Dispensary Medical Officers in their dealings with the sufferings of the poor, but as they were less strikingly tragic they did not challenge public attention. The following, taken from authentic records, will show how a long life spent in the Dispensary System may be rewarded towards its close.

CASE OF SUPERANNUATION REFUSED.

In the *Derry Standard* of September 15th, 1902, a report is given of the meeting of the Donegal Board of Guardians and District Council on Saturday, September 13th. The following appears :—

"An application from Dr. R. H. Pope, late Medical Officer of the Workhouse, who recently tendered his resignation through failing health, for superannuation was next considered. Mr. Edward Melly proposed, and Mr. Philip M'Golrick seconded—*That Dr. Pope be allowed no superannuation ;* and this was passed unanimously."

Will intending candidates for Poor Law appointments read, mark, and inwardly digest the foregoing paragraph ?

There are instances without number where medical officers,

knowing that they would be refused superannuation, held office long after they were incapable of efficiently performing their duties, until, like the late Dr. Walsh, they fell by the roadside and were carried home to die.

Here is another instance taken from *The Medical Press and Circular* of October 22nd, with respect to—

DISPENSARY DOCTORS AND LEAVE OF ABSENCE.

The necessity for combination among medical men in the Poor Law Service is becoming daily more apparent. Another example of this is afforded by the report in the *Galway Express* of September 27th, 1902, of the proceedings of the Galway Guardians on the 24th of the same month.

Dr. Kirwan, of Oranmore, and Dr. Glynn, of Turloughmore, applied for leave of absence. It was reported to the Board that £16 had been paid for discharging Dr. Kirwan's duty when on leave in 1901, but that he had got no leave this year, whereupon the Board refused the leave sought.

Dr. Glynn's case, from the enlightened point of view of the guardians, was a very glaring one. It was shown that "during eighteen months he had caused expense to the guardians to the amount of £37 16s. He, not having the fear of the guardians before his eyes, nor the interests of the ratepayers at heart, had contracted typhus fever in the discharge of his duty, and so had imposed on the Board an expense of £37 10s. for substitutes during his illness, and of £10 10s. for substitute during leave of absence, presumably for recovering his strength. Such conduct could not be encouraged, and by a vote of thirteen to four it was resolved to give him three weeks' leave if he paid for his own substitute."

It is obvious that no combination of medical men can prevent their contracting infectious disease, nor enable them while ill to discharge their duties, but it certainly can prevent their being penalised for having the audacity to succumb to infection, or under the hardships and exposure of their calling.

The whole Irish Dispensary System at present urgently cries out for reform.

As it stands, the chief requirements (first two essential) in order to obtain an appointment are—(1) religion, (2) politics, (3) favour and affection. And this is a liberty-loving country! Day by day we read in our newspapers reports of elections where the merits of the candidates are flouted and the interests of the poor forgotten.

What, in the name of common sense and justice, has a man's religion or politics to do with his efficiency? Surely it is time to brand such a line of action as a public scandal.

Here is another instance that recently occurred in the West of Ireland: Dr. C. reported having engaged Dr. C. to act for him during the time he would be away on his holiday.

Guardian No. 1—"This doctor is after coming from South Africa, and we will not have him."

Guardian No. 2.—"No matter who we have, we will not have one of Chamberlain's hirelings."

Guardian No. 1.—"I propose that one of our own medical officers be employed."

Guardian No. 3, in supporting the resolution, said that "Dr. C. went to South Africa to help to slay liberty-loving people, and now he had come to live among them, but they would not have his services."

Guardian No. 4.—"It would be very hard on the people of B. to have to go to C. for a doctor."

Guardian No. 5.—"We would rather go to C. than have the South African doctor."

The proposed resolution was then carried.

I cannot understand the attitude of the Local Government Board, which, in the exercise of its statutory powers, has a right to step in and prevent some of the grosser cases of mal-administration of the Medical Service throughout the country.

The Local Government Board, I regret to observe, in many instances where the guardians wished to increase the salaries of the medical officers for lengthened service and increased duties, for reasons best known to themselves refused to sanction such increase, thus setting an example of niggardly treatment to Boards of Guardians who are already sufficiently indisposed to give fair remuneration for efficient work.

In the Naas Union the guardians, to their credit, determined to increase the salary of Dr. Morrissey, the Dispensary Medical Officer of Ballymore, to the same level as his brother medical officers, which after much discussion and a great fight was carried by an overwhelming majority. The Local Government Board calmly looked on while the battle raged between the guardians, and then informed them that the increase of salary could not be sanctioned owing to the fact that Dr. Morrissey had been such a short time appointed, and that he had accepted the miserable sum

of £100 a year. I regret this all the more as a distinguished Fellow of this College presides over the Medical Department of the Local Government Board, in the person of my esteemed and valued friend, Dr. Thomas Stafford, who himself held the honourable post of Dispensary Medical Officer, and who must know from personal experience what the privations of the Service are, and who has, in my knowledge, used his influence to ameliorate its conditions in many instances.

For it must be observed that the legal obligation in maintaining the Poor Law Medical Service in a state of efficiency rests primarily on the Local Government Board. The Board have excellent intentions, and, I have no doubt, if the power were committed to their hands would raise the Service to a standard of efficiency, but as the law stands they are unable to give effect to the reform they have indicated.

It must be borne in mind that we do not plead in any spirit of Trades Unionism for increased advantages for our professional brethren, but for an improvement in the system of medical relief which will give the poor, the great majority of our countrymen, the full effect of the benefits to which in all humanity they are entitled. There is no one who has the hardihood to assert that they receive such benefits under the present regime. Do not misunderstand the position—it is not entirely a question of salary. All the features of the present system are objectionable—the mode of election, the issue of tickets, the treatment of the medical officers, the uncertainty of any pensions for old age. These must react to the discontent of the holder of the office and to the detriment of the public service.

I warn all young men of ability and spirit not to enter the Irish Dispensary System until the Government establishes a Local Government Medical Service, somewhat similar to the Services of the Army and the Navy.

Every newly-appointed medical officer should have a minimum salary of £200 a year, exclusive of practice, to start with, and promotion according to service and merit from the poorer to the better districts as vacancies occur, with a full month's holiday as a matter of right, as well as an assured pension according to Civil Service rules.

To bring about reform in the direction indicated, the Treasury may justly be called upon to increase its contributions to the public rates. Ireland, a country of exceptional poverty in the Empire,

requires exceptional treatment, and the additional outlay in aid of poor districts would be a sound political economy.

The Poor Law Medical Service would then be in every way improved if entrance were obtained by open competition, the whole Service administered from one central department. Such department should be controlled by Medical Commissioners who had themeslves acted in the Service, and who from personal knowledge knew the necessary requirements. I could not conscientiously urge you to enter the Service until the salary is increased and the grievance remedied, the only course that will elevate in this politically-distracted country the social and professional standing of the Irish Poor Law Dispensary doctor.

Gentlemen, you have the matter in your own hands. If you are men and not slaves, you will not enter the Service as it at present exists.

SCIENTIFIC RESEARCH AT KHARTOUM.

THE Gordon Memorial College at Khartoum, which Lord Kitchener opened on Saturday, November 8, is now ready for the Chemical and Bacteriological Research Laboratories presented by Mr. Henry S. Wellcome during his recent visit to the Soudan. The fixtures and appliances made in England have already been shipped. The equipment for scientific work is most complete in every detail, and will be equal to that of any similar laboratories in Europe. The Sirdar has appointed, as Director of these Research Laboratories, Andrew Balfour, M.D., B.Sc., D.P.H., of Edinburgh, whose work in bacteriology is well known. The Soudan presents exceptional opportunities for the study of tropical diseases, especially Malaria, Typhoid, and Dysentery, and it is anticipated that the results of the investigations of Dr. Balfour and his staff will be of the greatest importance. Dr. Balfour will also assist the authorities in the investigation of the criminal poisoning cases which are very frequent in the Soudan. The character of the poisons used by the natives is at present often obscure, and it is possible that the work in these laboratories may considerably increase our knowledge of toxic agents. Apart from the original researches and general sanitary work, Dr. Balfour and his staff will devote their attention to the study of the cereals, textile fibres, and various matters affecting the development of the agricultural and mineral resources of the country.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—LOMBE ATTHILL, M.D., F.R.C.P.I.
General Secretary—JOHN B. STORY, M.B., F.R.C.S.I.

SECTION OF PATHOLOGY.

President—E. J. McWEENEY, M.D.
Sectional Secretary—A. H. WHITE, F.R.C.S.I.

Friday, November 7, 1902.

PROFESSOR E. H. BENNETT in the Chair.

Dislocation of Shoulder.

PROFESSOR E. H. BENNETT exhibited specimens and read a note on some cases in which Kocher's method of reduction of dislocated shoulder has failed. [His paper will be found at page 401.]

DR. KNOTT said he would like to ask Professor Bennett to explain why he considered Kocher's method is so much superior to horizontal and upper vertical extension?

PROFESSOR BENNETT, in reply, said the reason Kocher's method is so useful is that it applies particularly to the intra-coracoid dislocation, which is the most common, or its immediate modifications. He had never met with a case which resisted Kocher's method, except the two he had described.

Adenoma of the Liver.

In describing this case, DR. EARL said the liver showed the most marked cyanotic atrophy he had ever seen. His attention was drawn to a small, round mass, well marked off, and of a green colour. The liver contained a large number, fifteen or twenty, of these masses, and most probably there were more. The largest was about half an inch in diameter. The liver itself had altered in appearance and the histological characters of these masses were hard to make out; none of them abutted on the surface, and consequently his attention had not been drawn to them. The cells in them bore a close resemblance to liver cells. They were divided into lobules, and were surrounded by a fibrous capsule. The cells were arranged after the manner of normal liver cells, but

with less regularity. He found coagulated bile present, and there was a great deal of granular bile pigment in the liver. Sections of some of the smaller tumours showed more marked resemblance to normal liver structure. These tumours appeared to be one of the forms of adenoma. He presumed that cyanotic atrophy of the liver had nothing to do with these.

DR. DAWSON asked Dr. Earl whether this liver showed signs of malignancy? He had seen in Vienna two cases of adeno-carcinoma of the liver which resembled these.

PROFESSOR O'SULLIVAN said he would like to ask Dr. Earl if there was any difference between the cells in the liver and normal liver cells. He had a case of extreme cirrhosis of the liver in a young girl, in which there were growths through the liver, when the cells were larger than normal and less regularly arranged. He looked upon this as regenerative.

PROFESSOR WHITE said the question of whether this was an adenoma of the liver or an adeno-carcinoma must be left to Dr. Earl. He was inclined to agree with Dr. Earl that it was adenoma from its microscopic characters, and also as he felt sure that Dr. Earl would not have given it the name of adenoma if secondary growths were found. He said Dr. Scott had shown some time ago a case of a large single adenoma of liver.

DR. EARL, in reply to Dr. Dawson, said he felt certain that the tumours were not malignant. There were no growths found elsewhere than in the liver, and the fact that the resemblance to normal liver cells was so close would negative the view that the tumours were malignant. With regard to Dr. O'Sullivan he said he did not see any great difference between these cells and normal liver cells. As to whether there was an attempt at regeneration, that could not be decided.

Cavernoma of the Liver.

DR. EARL said that this was a well-recognised and not uncommon condition which occurs in human beings and in the lower animals. Cavernomata were sometimes single, but generally, as in this case, multiple, and usually occurred in elderly people, though sometimes they were seen at a very early age, even in infants of a few weeks old. They appeared of a dark purple colour on account of the contained blood, and were of various sizes. They might be as large as an apple. They were not raised above the surface of the organ when they abutted on it, and they were

also found in its substance. Their structure resembles that of the cavernous tissue of the penis. Simple muscular tissue is said to occur in their walls. In some cases liver cells have been found in their walls. The larger tumours are surrounded by a fibrous capsule; the smaller merge in the liver substance without any capsule. Though the condition is well recognised, there is considerable doubt as to its pathogenesis. Cavernomata have been considered to be tumours, but they never cause any enlargement of the liver. They are merely substitutions of the liver tissue, and are generally believed to be due to dilatation of lobular cavities with subsequent pressure atrophy. Tumours very similar to these have been produced in cats by causing narrowing of the hepatic vein. The fact that liver cells are found in the walls is in favour of their origin from pre-existing capillaries in these places.

An Epithelial Tumour of the Gall-Bladder.

PROFESSOR J. A. SCOTT exhibited a tumour of this description removed by operation by Mr. Heuston. There was a large mass attached to the gall-bladder, which was swollen. There were calculi in it and in the surrounding tissues. A section showed it to be of undoubted epithelial origin. Most of the cells were undergoing a mucoid degeneration.

Conglobate Tuberculous Tumour of the Choroid.

MR. ARTHUR BENSON and DR. EARL showed a case of above in a girl, aged fourteen. The growth, which dated only from March 27, 1902, occupied almost the whole interior of the globe, the vitreous being pushed to one side and the lens remaining transparent throughout. This variety of tuberculosis of the choroid was stated to be a very rare affection, whilst the miliary variety was comparatively common. In this case another remarkable circumstance was noted—viz., that there was no tuberculous family history, nor was there any other focus of tuberculous disease to be found in any other part of the patient. The sections, which were made by Dr. Earl, showed that caseation had taken place in the tumour, and giant cells were also visible. The growth was adherent to the sclerotic in one place, and the retina was wholly detached. The other eye was normal, and the child, though naturally frail, seemed to be in excellent health.

DR. EARL said that on cutting into the eye he found the vitreous chamber almost completely obliterated by a whitish mass, and

he could see a couple of opaque spots even with the naked eye. On examining this mass he found it was strongly adherent to the sclerotic at one point, and at no other. It was a tuberculous mass with a small quantity of caseation. The ciliary processes and the iris were quite free. The layers of the retina were to be seen.

MR. STORY said the case reminded him of a specimen which he had exhibited some two years ago. It was one of a solitary tuberculous tumour in a young woman, aged eighteen or twenty. It was in the optic papilla, and simulated the choked disc of intracranial disease. The growth in this case was retinal rather than choroidal.

THE CONTAGIOUSNESS OF PNEUMONIA.

ALTHOUGH pneumonia is one of the oldest known diseases, there are many points in its ætiology which remain obscure. The explanation may possibly be found in the fact that it is not a distinct morbid entity, but is merely a collateral consequence or a sequel of many complex pathological states. It is very generally believed to owe its origin to chill; but, although this may be one factor in its production, it cannot be the only, or even the principal, one. Nor can the pneumococcus be the essential factor in all forms of pneumonia, since its presence cannot be demonstrated. Then, too, there is a particular variety of the diesase, which appears to be readily capable of transmission to persons exposed to infection, a quality which is by no means characteristic of all cases in which the pneumococcus is found. With the progress of knowledge it may ultimately be possible to differentiate the various forms of pneumonia one from another by the aid of bacteriology, although clinically they are indistinguishable. In this respect it is highly desirable to distinguish between active and passive pneumonia, the first being secondary to some deeply-seated organic disturbance; while the latter is, in the great majority of instances, probably the direct outcome of infection—*The Medical Press*, Oct. 22, 1902.

LITERARY INTELLIGENCE.

THE first edition of Dr. A. T. Schofield's book, entitled "The Force of Mind; or, the Mental Factor in Medicine," which was given to the public as recently as the 24th of last July, has been, owing to its rapid sale, out of print for several weeks. We are informed by the publishers, Messrs. J. & A. Churchill, that the type has been reset, and that the new edition, revised by the author, is now ready.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by Sir J. W. MOORE, B.A.; M.D., Univ. Dubl.; F.R.C.P.I.; F.R. Met. Soc.; Diplomate in State Medicine and Ex-Sch. Trin. Coll. Dubl.;

VITAL STATISTICS.

For four weeks ending Saturday, November 1, 1902.

IRELAND.

TWENTY-TWO TOWN DISTRICTS.

The average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ending November 1, 1902, in the Dublin Registration Area and the twenty-one principal provincial urban districts of Ireland was 21·1 per 1,000 of their aggregate population, which, for the purposes of these returns, is estimated at 1,092,401. The deaths registered in each of the four weeks ended Saturday, November 1, and during the whole of that period, in the several districts, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

Towns, &c.	Week ending				Average Rate for 4 weeks	Towns, &c.	Week ending				Average Rate for 4 weeks
	Oct. 11	Oct. 18	Oct. 25	Nov. 1			Oct. 11	Oct. 18	Oct. 25	Nov. 1	
22 Town Districts	21·2	22·8	23·4	21·1	22·1	Lisburn	0·0	18·2	4·5	0·0	5·7
Armagh	13·7	6·9	34·4	13·7	17·2	Londonderry	7·7	10·2	12·8	15·4	11·5
Ballymena	9·6	9·6	19·2	9·6	12·0	Lurgan	26·6	13·3	17·7	26·6	21·1
Belfast	21·5	22·4	21·2	21·7	21·7	Newry	16·8	16·8	12·6	8·4	13·7
Clonmel	10·3	25·6	20·5	15·4	18·0	Newtownards	17·2	11·4	17·2	28·6	18·6
Cork	24·0	14·4	22·6	21·9	20·7	Portadown	10·3	15·5	10·3	20·7	14·2
Drogheda	24·5	16·3	20·4	12·3	18·4	Queenstown	33·0	26·4	19·8	19·8	24·7
Dublin (Reg. Area)	24·8	26·8	30·0	24·0	26·4	Sligo	33·6	19·2	9·6	4·8	16·8
Dundalk	19·9	8·0	16·0	12·0	14·0	Tralee	5·3	37·0	15·9	5·3	15·9
Galway	7·8	35·0	23·3	3·9	17·5	Waterford	11·7	23·4	23·4	35·1	23·4
Kilkenny	14·7	49·1	9·8	14·7	22·1	Wexford	9·3	14·0	23·3	28·0	18·7
Limerick	23·2	27·3	21·9	17·8	22·5						

The deaths (excluding those of persons admitted into public institutions from without the respective districts) from the principal zymotic diseases, registered in the 22 districts during the week ended Saturday, November 1, were equal to an annual rate of 3·2 per 1,000, the rates varying from 0·0 in fourteen of the districts to 13·6 per 1,000 in Waterford—the 18 deaths from all causes registered in that district including 2 from measles, 3 from whooping-cough, and 2 from diarrhœa. Among the 149 deaths registered in Belfast were 8 from measles, one from scarlet fever, 3 from whooping-cough, 3 from diphtheria, 3 from enteric fever, and 4 from diarrhœa.

DUBLIN REGISTRATION AREA.

The Dublin Registration Area now consists of the City of Dublin as extended by the Dublin Corporation Act, 1900, together with the Urban Districts of Rathmines, Pembroke, Blackrock, and Kingstown. The population of this Area is 378,761; that of the City being 293,394, Rathmines 33,208, Pembroke 26,025, Blackrock 8,759, and Kingstown 17,380.

In the Dublin Registration Area the births registered during the week ended Saturday, November 1, amounted to 183—88 boys and 95 girls; and the deaths to 183—92 males and 91 females.

DEATHS.

The registered deaths represent an annual rate of mortality of 25·2 in every 1,000 of the population. Omitting the deaths (numbering 9) of persons admitted into public institutions from localities outside the Area, the rate was 24·0 per 1,000. During the forty-four weeks ending with Saturday, November 1, the death-rate averaged 24·3, and was 2·1 below the mean rate for the corresponding portions of the ten years 1892–1901.

Sixteen deaths from measles were registered during the week ended Saturday, November 1. In the preceding 4 weeks 8, 11, 19, and 20 deaths respectively had been registered. Three deaths from scarlet fever were registered; 3 deaths from *diarrhœa* and one death each from influenza, whooping-cough, diphtheria, and continued fever were registered; also 2 deaths from enteric fever.

Tuberculous disease caused 33 deaths, namely, one from tuberculous phthisis, 20 from *phthisis*, 4 deaths from tuberculous meningitis, and 8 deaths from other forms of the disease.

One death from carcinoma, and 6 deaths from *malignant disease*, "*cancer*," were registered.

There were 20 deaths from diseases of the nervous system, including 8 (all of children) from *convulsions*.

There were 18 deaths from diseases of the heart and blood-vessels.

Thirty-seven deaths were registered as being due to diseases of the respiratory system, equal to an annual rate of 5·1 per 1,000 of the population. This rate is the same for the corresponding period of the past 10 years. There were 23 deaths from bronchitis, 5 from broncho-pneumonia, and 7 were registered as from *pneumonia*.

There was one accidental death.

In 10 instances the cause of death was "uncertified," there having been no medical attendant during the last illness. These cases comprise the deaths of 7 children under 5 years of age (including 6 infants under one year old) and the death of one man aged 61 years.

Eighty-six of the persons whose deaths were registered during the week were under 5 years of age (45 being infants under one year, of whom 12 were under one month old), and 29 were aged 60 years and upwards, including 13 persons aged 70 and upwards, of whom 5 were octogenarians, and 3 (2 males and a female) were stated to have been aged 90, 90, and 91 years respectively.

The Registrar-General points out that the names of causes of death printed above in italics should be avoided whenever possible in Medical Certificates of the Cause of Death.

STATE OF INFECTIOUS DISEASE IN DUBLIN.

(1.) Cases of Infectious Diseases Notified to the Public Health Committee of the Corporation.

Sir Charles A. Cameron, C.B., Medical Superintendent Officer of Health for the City of Dublin, has furnished information regarding the number of cases of infectious diseases in the City of Dublin notified under "The Infectious Diseases (Notification) Act, 1899," as follows: —

Week ending October	11,	1902,	..	..	280 cases.
,, ,,	18,	,,	..	..	253 cases.
,, ,,	25,	,,	..	..	278 cases.
,, November	1,	,,	..	..	271 cases.

Of the 271 cases notified in the week ended November 1, 17 were erysipelas, 24 enteric fever, 42 scarlatina, 16 diphtheria, 159 measles, 2 "continued fever," one typhus fever, one rubella, one puerperal fever, and 8 varicella.

(2.) CASES OF INFECTIOUS DISEASE IN RATHMINES URBAN DISTRICT.

Mr. Fawcett, Executive Sanitary Officer for Rathmines Urban Council, has furnished information regarding the number of cases of infectious diseases in the Urban District of Rathmines notified under "The Infectious Diseases (Notification) Act, 1889," as follows :—

Week ending	October	11,	1902,	.. ..	8 cases.
,,	,,	18,	,,	.. ..	6 cases.
,,	,,	25,	,,	.. ..	5 cases.
,,	November	1,	,,	.. ..	15 cases.

Of the 15 cases notified in the last week, 3 were enteric fever, 4 were measles, 6 were scarlet fever, one was typhus fever, and one was varicella.

(3.) CASES OF INFECTIOUS DISEASE IN PEMBROKE URBAN DISTRICT.

Mr. Manly, Executive Sanitary Officer for Pembroke Urban Council, has furnished information regarding the number of cases of infectious disease in the Urban District of Pembroke notified under "The Infectious Diseases (Notification) Act, 1889," as follows :—

Week ending	October	11,	1902,	.. ..	9 cases.
,,	,,	18,	,,	.. ..	9 cases.
,,	,,	25,	,,	.. ..	10 cases.
,,	November	1,	,,	.. ..	8 cases.

Of the 8 cases notified in the last week, 5 were scarlet fever, one was measles, one was enteric fever, and one was varicella.

(4.) CASES OF INFECTIOUS DISEASES UNDER TREATMENT IN DUBLIN HOSPITALS.

During the week ending Saturday, November 1, 48 cases of measles were admitted to hospital, being 22 over the admissions for the preceding week; 29 cases were discharged, there were 5 deaths, and 109 cases remained under treatment at the close of the week.

Twenty cases of enteric fever were admitted to hospital, 19 cases were discharged, and 107 cases remained under treatment at the close of the week.

Forty-two cases of scarlatina were admitted to hospital, 20 cases were discharged, there were 2 deaths, and 139 cases remained under treatment at the close of the week. There were also 27 convalescent cases under treatment at Beneavin, Glasnevin, the Convalescent Home of Cork-street Fever Hospital.

Three cases of typhus were discharged, and 3 cases remained under treatment at the close of the week.

Sixteen cases of diphtheria were admitted to hospital, 5 were discharged, 2 died, and 48 cases remained under treatment at the close of the week.

In addition to the above-named diseases, 5 cases of pneumonia were admitted to hospital, 8 patients were discharged, and 7 cases remained under treatment at the end of the week.

STATE OF INFECTIOUS DISEASE IN THE CITY OF BELFAST.

Dr. Whitaker, Medical Superintendent Officer of Health, has furnished information regarding the number of cases of infectious diseases in the City of Belfast notified under "The Infectious Diseases (Notification) Act, 1889," as follows :—

Week ending	October	11,	1902,	..	..	76 cases.
,,	,,	18,	,,	..	..	93 cases.
,,	,,	25,	,,	..	..	83 cases.
,,	November	1,	,,	..	..	104 cases.

Of the 104 cases notified in the week ended November 1, 25 were enteric fever, 16 erysipelas, 8 diphtheria, 17 "continued fever," 33 scarlet fever, 3 membranous croup, and 2 puerperal fever.

ENGLAND AND SCOTLAND.

The mortality for the week ended Saturday, November 1, in 76 large English towns, including London (in which the rate was 16·3), was equal to an average annual death-rate of 16·6 per 1,000 persons living. The average rate for eight principal towns of Scotland was 18·9 per 1,000, the rate for Glasgow being 19·8 and for Edinburgh 17·7.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ N., Long. 6° 15′ W., for the Month of October, 1902.

Mean Height of Barometer, - - -	29·974 inches.
Maximal Height of Barometer (23rd, at 9 p.m.),	30·410 ,,
Minimal Height of Barometer (15th, at 9 p.m.),	29·180 ,,
Mean Dry-bulb Temperature, - - -	50·6°.
Mean Wet-bulb Temperature, - - -	48·6°.
Mean Dew-point Temperature, - - -	46·6°.
Mean Elastic Force (Tension) of Aqueous Vapour,	·318 inch.
Mean Humidity, - - - -	86·8 per cent.
Highest Temperature in Shade (on 12th), -	61·5°.
Lowest Temperature in Shade (on 17th), -	40·3°.
Lowest Temperature on Grass (Radiation) (12th),	35·3°.
Mean Amount of Cloud, - - -	70·5 per cent.
Rainfall (on 23 days), - - - -	3·056 inches.
Greatest Daily Rainfall (on 4th), - -	·809 inch.
General Directions of Wind, - -	E.N.E., W.N.W., S.W.

Remarks.

October, 1902, was noted for its clouded skies, deficient sunshine, frequent rainfall, and high mean temperature. The last characteristic depended more on the cloudy condition of the sky than on any remarkable prevalence of warm winds. The sun's power was checked by day through the persistence of clouds—70·5 per cent., while terrestrial radiation was interfered with by night through the same cause. Thus no extreme temperatures were recorded—the highest reading of the screened thermometers being 61·5°, the lowest 40·3°—range, 21·2°. While rain fell frequently—on 23 days—the falls were considerable only on the 4th (·809 inch), 9th (·323 inch), and 10th (·561 inch). A total eclipse of the moon was seen under exceptionally favourable circumstances early on the morning of the 17th.

In Dublin the arithmetical mean temperature (51·7°) was very decidedly above the average (49·4°); the mean dry-bulb readings at 9 a.m. and 9 p.m. were 50·6°. In the thirty-seven years ending with 1901, October was coldest in 1892 (M. T. = 44·8°) and in 1896 (M. T. = 45·0°). It was warmest in 1876 (M. T. = 53·1°). The M. T. in 1898 was 52·8°. In 1901 it was 49·8°.

The mean height of the barometer was 29·974 inches, or 0·134 inch above the corrected average value for October—namely,

29·840 inches. The mercury rose to 30·410 inches at 9 p.m. of the 23rd, having fallen to 29·180 inches at 9 p.m. of the 15th. The observed range of atmospheric pressure was, therefore, 1·230 inches.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 50·6°, or 4·3° below the value for September, 1902. The arithmetical mean of the maximal and minimal readings was 51·7°, compared with a thirty years' average of 49·4°. Using the formula, *Mean Temp.* = *Min.* + (*Max.* — *Min.* × ·485), the mean temperature was 51·5°, or 2·3° above the average mean temperature for October, calculated in the same way, in the thirty years, 1871–1900, inclusive (49·2°). On the 12th the thermometer in the screen rose to 61·5°—wind, S.S.W.; on the 17th the temperature fell to 40·3°—wind, W.N.W. The minimum on the grass was 35·3° on the 12th. The thermometer did not sink to 32° in the screen, or even on the ground, in the City.

The rainfall was 3·056 inches, distributed over 23 days—the rainfall and the rainy days were above the average. The average rainfall for October in the thirty-five years, 1866–1900, inclusive, was 2·940 inches, and the average number of rainy days was 18. In 1880 the rainfall in October was very large—7·358 inches on 15 days. In 1875, also, 7·049 inches fell on 26 days. On the other hand, in 1890, only ·639 inch fell on but 11 days; in 1884, only ·834 inch on but 14 days; and in 1868 only ·856 inch on 15 days. In 1901 the October rainfall was 2·396 inches on 21 days.

High winds were noted on 14 days, but attained the force of a gale on only one occasion—the 15th. The atmosphere was more or less foggy in Dublin on the 8th and 11th. The duration of bright sunshine was estimated at only 84·25 hours, compared with 127·25 hours in October, 1900, and 115·25 hours in October, 1901.

The rainfall in Dublin during the ten months ending October 31st amounted to 24·481 inches on 172 days, compared with 12·366 inches on 123 days during the same period in 1887 (the dry year), 27·863 inches on 177 days in 1900, 20·466 inches on 145 days in 1901, and a thirty-five years' average of 22·820 inches on 163 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall in October amounted to 4·655 inches on 17 days. Of this quantity, ·950 inch fell on the 11th, ·750 inch on the 12th, and ·590 inch on the 10th. From January 1st, 1902, up to October 31st, rain fell at Knock-

dolian on 140 days to the total amount of 31·811 inches. In 1893 the rainfall in the corresponding ten months was 17·801 inches on 133 days; in 1894, 32·221 inches on 154 days; in 1897, 32·730 inches on 171 days; in 1898, 24·177 inches on 140 days; in 1899, 30·000 inches on 150 days; in 1900, 33·311 inches on 155 days; and in 1901, 28·030 inches on 135 days.

At Cloneevin, Killiney, Co. Dublin, the rainfall in October was 2·760 inches on 20 days, compared with ·710 inch on 14 days in 1893, 6·460 inches on 17 days in 1894, 2·830 inches on 17 days in 1900, 2·520 inches on 21 days in 1901, and a seventeen years' average (1885–1901) of 3·121 inches on 16·1 days. On the 4th, ·77 inch fell. Since January 1, 1902, 26·150 inches of rain have fallen at this station on 159 days.

Dr. Arthur S. Goff reports that at Lynton, Dundrum, Co. Dublin, rain fell on 24 days to the amount of 3·45 inches, compared with 2·40 inches on 21 days in October, 1901. The greatest measurement in 24 hours was ·94 inch on the 10th. The mean temperature in the shade was 50·9°, the range being from 59° on the 24th and 29th to 41° on the 17th, 18th and 19th. The mean temperature of October, 1901, was 50·0°.

Dr. B. H. Steede reports: At the National Hospital for Consumption, Newcastle, Co. Wicklow, the rainfall in October was 3·577 inches on 18 days, compared with 3·175 inches on 13 days in 1897, 4·385 inches on 17 days in 1898, 1·484 inches on 11 days in 1899, 3·551 inches on 14 days in 1900, and 3·200 inches on 21 days in 1901. The heaviest falls in 24 hours were ·710 inch on the 7th, ·541 inch on the 10th, and ·500 inch on the 9th. The highest temperature in the screen was 61·0° on the 24th, the lowest was 40·0° on the 9th. At this Second Order Station the rainfall from January 1 to October 31, inclusive, amounted to 29·742 inches on 154 days, compared with 26·479 inches on 139 days in the corresponding ten months of 1898, 27·643 inches on 140 days in 1899, 28·599 inches on 150 days in 1900, and 24·953 inches on 142 days in 1901.

In the City of Cork, rain fell on 18 days to the amount of 1·30 inches, or 2·03 inches less than the average for October. The greatest day's rainfall was 0·29 inch on the 25th.

At the Ordnance Survey Office, Phœnix Park, the rainfall was 2·732 inches on 23 days, compared with 2·790 inches on 20 days in October, 1901. The heaviest rainfall in 24 hours was ·510 inch on the 10th.

Dr. J. Byrne Power, F.R. Met. Soc., Medical Superintendent

Officer of Health, Kingstown, Co. Dublin, reports that the mean temperature at that health resort was 52·2°, being 0·2° above the average for October during the previous 4 years, the extremes being—highest, 63° on the 29th; lowest, 40° on the 19th. At Bournemouth the mean was 51·6°—highest, 63° on the 29th; lowest, 38° on the 31st. The mean daily range of temperature was 7·8° at Kingstown and 12·5° at Bournemouth. The mean sea temperature at Sandycove bathing place was 54·8°. The mean humidity of the air was 88 per cent. The mean height of the barometer was 29·985 inches. The rainfall amounted to 2·32 inches on 19 days at Kingstown; at Bournemouth, to 1·89 inches on 16 days. The duration of sunshine was 67·5 hours at Kingstown, whereas it was 71·9 hours at the Ordnance Survey Office, Phœnix Park, being 19·9 hours below the shortest duration previously recorded for October, and 49·1 hours below the average at that station during the previous 11 years. It was 92·5 hours at Valentia, 68·5 hours at Parsonstown, 62·9 hours at Southport, and 75·4 hours at Eastbourne.

ALVARENGA PRIZE OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA.

THE College of Physicians of Philadelphia announces that the next award of the Alvarenga Prize, being the income for one year of the bequest of the late Senor Alvarenga, and amounting to about One Hundred and Eighty Dollars, will be made on July 14, 1903, provided that an essay deemed by the Committee of Award to be worthy of the Prize shall have been offered. Essays intended for competition may be upon any subject in Medicine, but cannot have been published, and must be received by Thomas R. Neilson, M.D., the Secretary of the College, on or before May 1, 1903. Each essay must be sent without signature, but must be plainly marked with a motto and be accompanied by a sealed envelope having on its outside the motto of the paper and within the name and address of the author. It is a condition of competition that the successful essay or a copy of it shall remain in possession of the College; other essays will be returned upon application within three months after the award. The Alvarenga Prize for 1902 was not awarded, the Committeee having decided that no essay of sufficiently high standard was submitted in competition.

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Yearsley, Mr. Macleod, Broca's operative surgery of the middle ear, *Rev.*, 371.
Yellow Fever Expedition to Pará, Report of the, *Rev.*, 422.

Zuckerkandl, Dr. Otto, atlas and epitome of operative surgery, *Rev.*, 374.
Zymotic disease, shellfish the vehicle of, 177.

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